APRIL '59

MODERN TEXTILES MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

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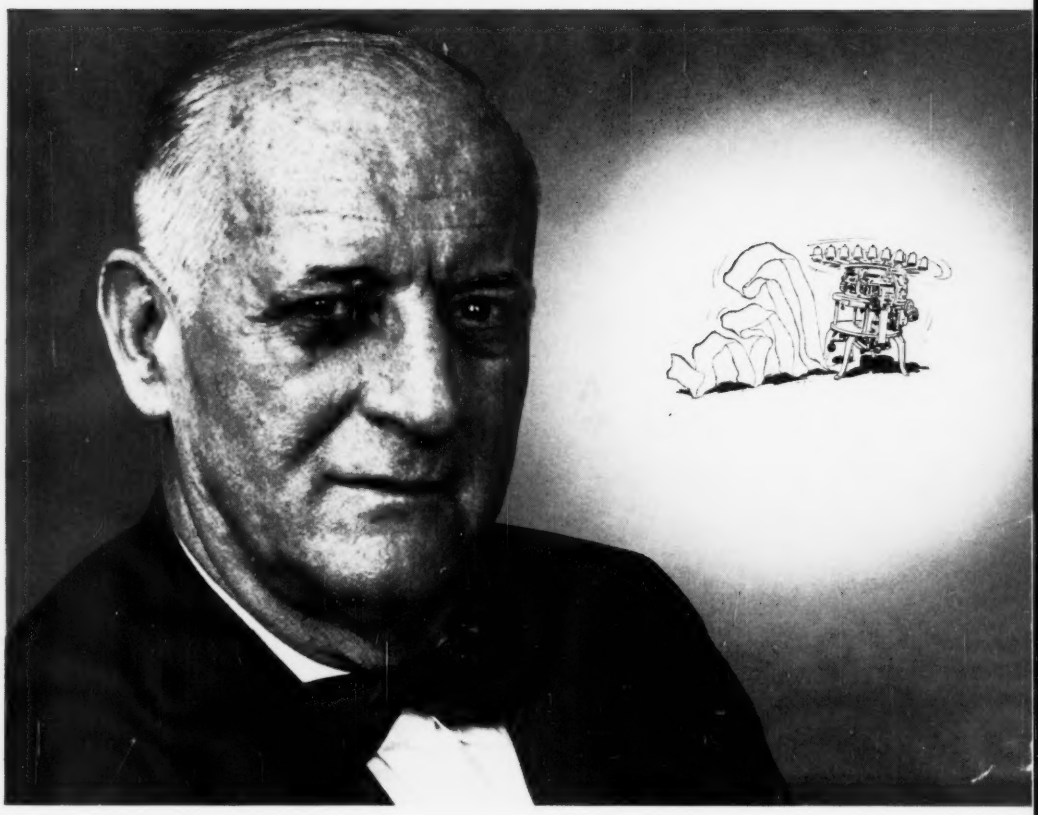

THOMAS O. MOORE of Hanes Knitting—he heads the Underwear Institute at a time of new directions—story page 31

THIS MONTH'S LEADING ARTICLES:

The Knitting Show—What to look for

New dryer speeds lace finishing

New knitter widens styling possibilities

How one hosiery knitter prospers

AND 10 MORE EXCLUSIVE ARTICLES AND TIMELY REPORTS

PLANNED QUALITY! Quality doesn't just happen at Draper . . . it is the result of careful planning and engineering. Each part, regardless of size, shape, or material, is designed to do a specific job in the best possible manner. New parts, *as illustrated above*, are constantly being developed to increase your mill efficiency and profits. *See your Draper representative today* for cost-saving parts and mechanisms.

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THE NEED: A cone for use in accelerated yarn conditioning

Recent years have seen the introduction of equipment that reduces the yarn conditioning cycle from 10 or 12 hours to only about 2 hours. This is indeed significant progress. However, this process presented two major problems—a cone was required with a surface to which the yarn would not stick and strong enough to withstand the additional moisture absorption.

Sonoco research solved these problems quickly. The answer was found in the "standard" gray Sonoco Yarn-saver Cone with full Unitex surface. Use of this type cone has eliminated production difficulties with accelerated cycle yarn conditioning equipment.

Only Sonoco, with its modern laboratory, engineering and production facilities, could have answered this industry need. It is typical of countless cases where Sonoco leadership, based on 60 years' experience, has benefited the industry. Let Sonoco help you!

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

KNITTING ARTS EXHIBITION
MAY 4-8 1959
BOOTHS 507-508

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MODERN
TEXTILES MAGAZINE

April, 1959 Vol. 40, No. 4

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Established 1925

* * *

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American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technoloy, Inc. ..... 100 W. 55th St., New York
American Cotton Manufacturers Institute, Inc. ..... 1501 Johnston Bldg., Charlotte, N. C.
American Cotton Manufacturers Institute, Inc. Man-Made Fibers and Silk Division ..... 10 East 40th St., New York
American Rayon Institute ..... 350 Fifth Avenue, New York
Man-Made Fiber Producers Association ..... 350 Fifth Ave., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 F. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York

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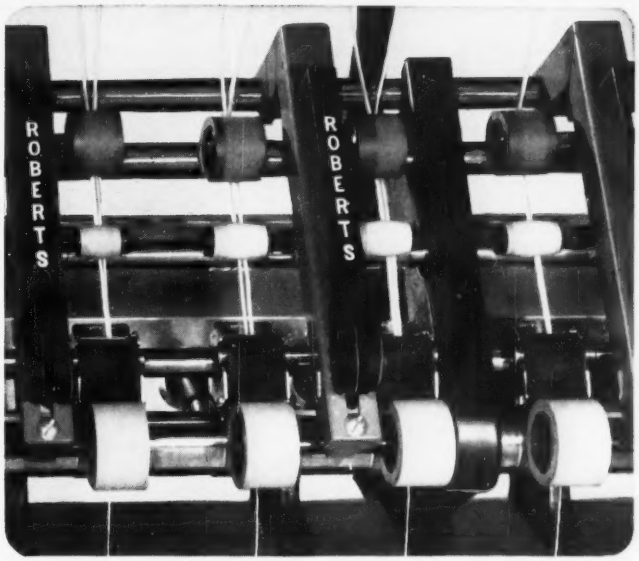
ROBERTS ARROW *LONG FIBER* SPINNING

- Any Fiber or Blend Synthetic or Natural
- Any Staple Length From 1½ to 8 Inches
- No Roll Setting Changes Needed at Any Time
- All Ball Bearing Construction For Smooth Operation



WITH ROBERTS *PermaSet* DRAFTING

ROBERTS ARROW

WM-2 ARROW *ShortFlo*

Rugged Chassis with Ball Bearings Throughout

Unitized Sectional Construction

Four-Roll Double Apron Drafting System

For Long-Staple Spinning, 100% or Blended

Drafts: 20 to 25 for Wool and Blends
25 to 50 for Synthetics and Blends

Front Roll Pressures from 90 to 120 pounds

UnitVac Power Suction Cleaning with Individual Removable Flutes

Roberts AeroCreel Handles Large-Package Roving

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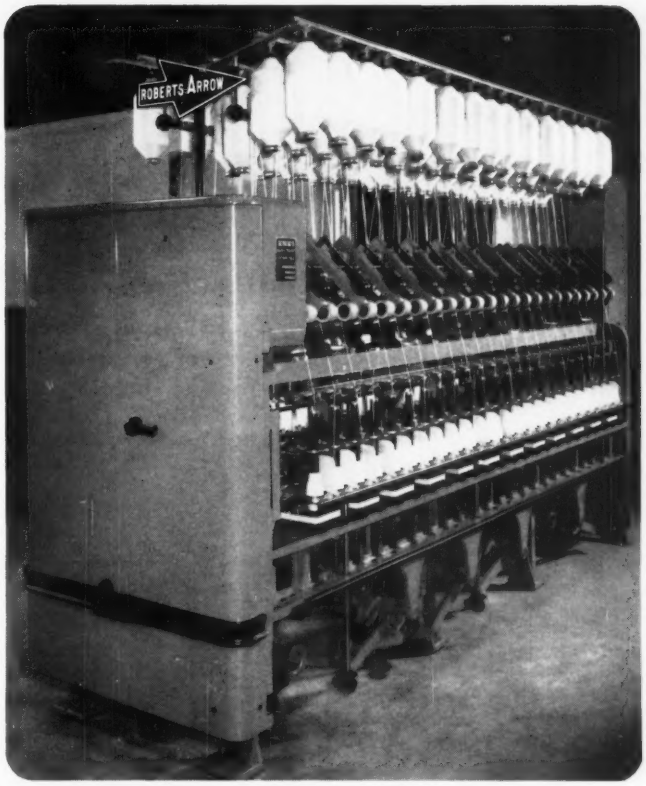
Completely Adjustable Draft, Lay, and Twist Constants

One Master Set of Gears for All Changes



Actual mill tests have proved that the ARROW WM-2 Worsted Frame gives higher quality yarns with fewer ends down and more even running at higher drafts and higher front-roll and spindle speeds.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

Bassill Leaving Enka

John E. Bassill has resigned as president of American Enka Corp., effective at the annual meeting on April 22, 1959. His successor will be elected at that time, when other organization changes also will be made.

Bassill has been head of American Enka since 1950. He previously headed Tubize Corp., the North American Rayon Corp. and American Bemberg Corp.

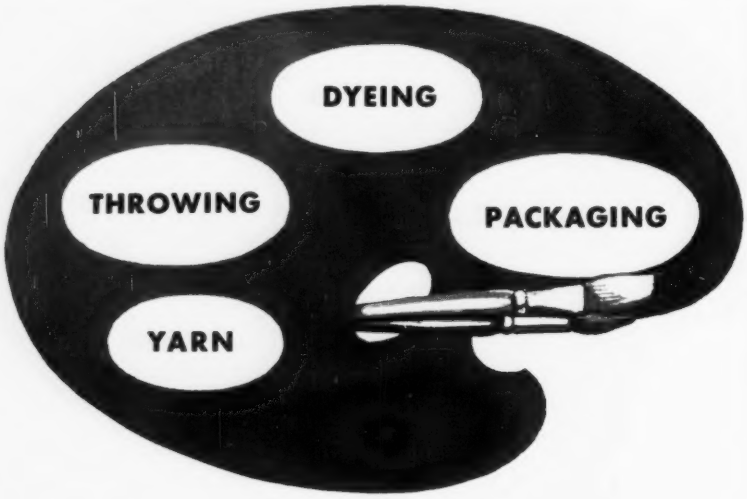
Improved Machinery Sales Seen

Roberts Co., textile spinning machinery manufacturer, expects that 1959 will be one of its most successful years following the effects of the 1957-58 recession which sent company sales and earnings down during the latest fiscal year.

Robert E. Pomeranz, president, bases the brighter outlook for the firm on the upturn in the textile industry, Roberts entry into the worsted yarn spinning field, its development of other textile equipment, a rise in new orders, and the start of sales activity by its recently-formed foreign subsidiaries. Roberts recently received a contract covering the installation of 12 Arrow WM-2 spinning frames at a long-fiber yarn mill in New England.

Duplan Stretch Yarn Growth

The Duplan Corp. has placed an order with Universal Winding Co. for sufficient equipment to double the stretch yarn capacity of Duplan's Cleveland, Tenn., plant. The plant, one of three throwing mills operated by Duplan, will produce Superloft continuous process stretch yarns exclusively.



A COMPLETE PACKAGE

of natural or dyed NYLON, DACRON or RAYON filament yarns in all deniers and types to meet your quality standards — in one order, for one charge.

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RAYON COMPANY

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REgent 9-5256

SALES REPRESENTATIVES: Shannonhouse & Wetzell, Johnston Building, Charlotte, N.C.; Carl L. Miller and Sons, Utica, N.Y.; R.C. Osborne & Co., Broad St. and Allegheny Ave., Philadelphia 32, Pa.; The Tillinghast-Stiles Co., 327 South LaSalle Street., Chicago 4, Illinois.

PLANTS AT: Philadelphia, Pennsylvania; Quakertown, Pennsylvania; Lansdale, Pennsylvania; Bethlehem, Pennsylvania and Kingston, Pennsylvania.

PIONEERING SYNTHETIC YARNS FOR OVER 35 YEARS

Linen Thread Co. Sold

Indian Head Mills, Inc., has purchased The Linen Thread Co., Inc., for cash and notes amounting to $12,000,000. The Linen Thread Co., a wholly-owned subsidiary of Linen Thread Co., Limited, Glasgow, Scotland, has operated mills in the U. S. for over 100 years, manufacturing threads, yarns, twines, sports nets and fish netting. It will be operated as wholly-owned subsidiary of Indian Head.

Course in Statistics

The Institute of Statistics at N. C. State College is sponsoring a one-week intensive short course in Statistics Methods for Research Workers in Industry and the Physical Sciences. The course will be held the week beginning August 10 at Brevard College, Brevard, N. C. An elementary and an advanced section of the course will be offered. *For further information write the editors.*

Named Sales Agent

Sauquoit Silk Co., Inc., has appointed Malina Co. a sales agent for all types of Sauquoit's thrown yarns, including its stretch and Helanca type yarns, for the weaving, knitting, woven label, lace and other trades. Malina, also a distributor for American Viscose Corp. and The Chemstrand Corp., has its principal sales offices at 125 W. 41st St., New York.

Book on Quality Control

Norbert L. Enrick's popular text, "Quality Control", has just been published in a third edition. This is a basic book on statistical quality control, written in simplified manner, but without omitting essentials. Those of our readers who liked Enrick's series of articles in MODERN TEXTILES, and have copies of his Modern Textiles Handbooks (Quality Control Through Statistical Methods, Modern Mill Controls, Mill Test Procedures), may wish to add this new book to their libraries. *For further information, write the editors.*

An Apple A Day Keeps The Doctor Away

CR-600

R-187

TRU-1

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PR-1024

Use Heanium®

PROPERLY ENGINEERED **HEANIUM®** GUIDES DO THE SAME THING TO KEEP DAMAGE AWAY FROM YOUR YARNS.

HEANIUM® THE ORIGINAL INDUSTRIAL CERAMIC OF GEM HARDNESS WILL TAKE THE ABUSE OF TODAYS NEWEST AND MOST ABRASIVE YARNS.

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WE THRIVE ON PROBLEMS

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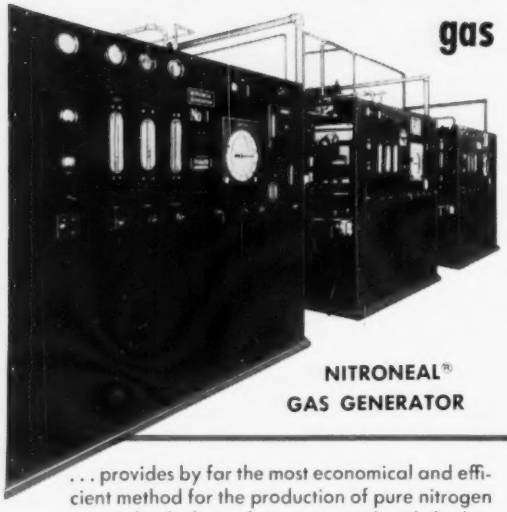
"VISIT OUR BOOTH NO. 43"

for the most efficient production of oxygen-free gas



NITRONEAL® GAS GENERATOR

. . . provides by far the most economical and efficient method for the production of pure nitrogen —*completely free of oxygen*—and with hydrogen content precisely controlled at any desired percentage between 0.5% and 25%. Nitrogen is supplied at a fraction of cylinder supply cost.

CHEMICAL DIVISION • 113 ASTOR STREET
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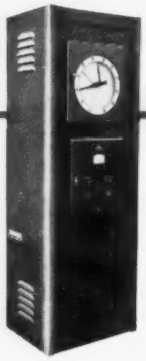
for indication of oxygen or hydrogen



The **MINOXO® INDICATOR** measures traces of molecular oxygen in other gases—from 1 to 10 parts per million, and from 1 to 100 PPM. High sensitivity and rapid speed of response enable it to be used for laboratory investigation and production quality control.

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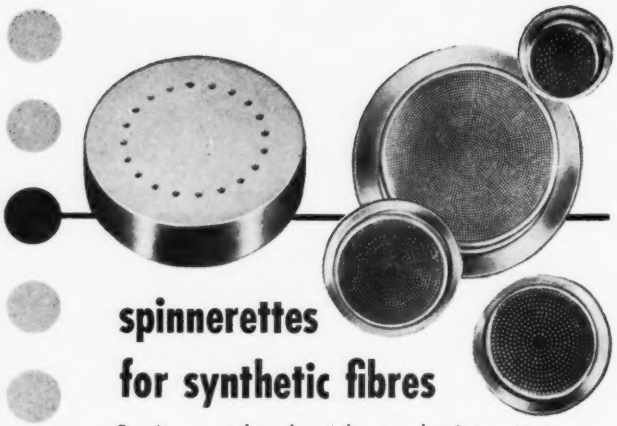

spinnerettes for synthetic fibres

Precious metal and stainless steel spinnerettes with rigidly controlled hardness and grain characteristics are available in standard and special designs. All surfaces are mirror-like, including walls of finest holes, for maximum protection against corrosion to assure trouble-free production. Write for "Spinnerettes" brochure.

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a complete line of platinum laboratory ware

All standard forms and sizes for chemical and physical purposes, made of platinum or any desired alloy. Line includes crucibles, reshapers, triangles, dishes, electrodes, anodes and cathodes. A catalog is available upon request. ★ ★

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NOW! A better permanent finish for Wash-and-Wears with Emulsifiable A-C® Polyethylene

As your fresh new designs for wash-and-wears come to life, give them the superior finish and enhanced end-use performance they deserve—with Emulsifiable A-C Polyethylene!

Synthetic fibers finished with A-C Polyethylene emulsions show excellent "hand," added abrasion resistance, increased tear strength and improved sewability . . . all at a *lower finishing cost*. With Emulsifiable A-C Polyethylene in your finishes, you gain all these important advantages:

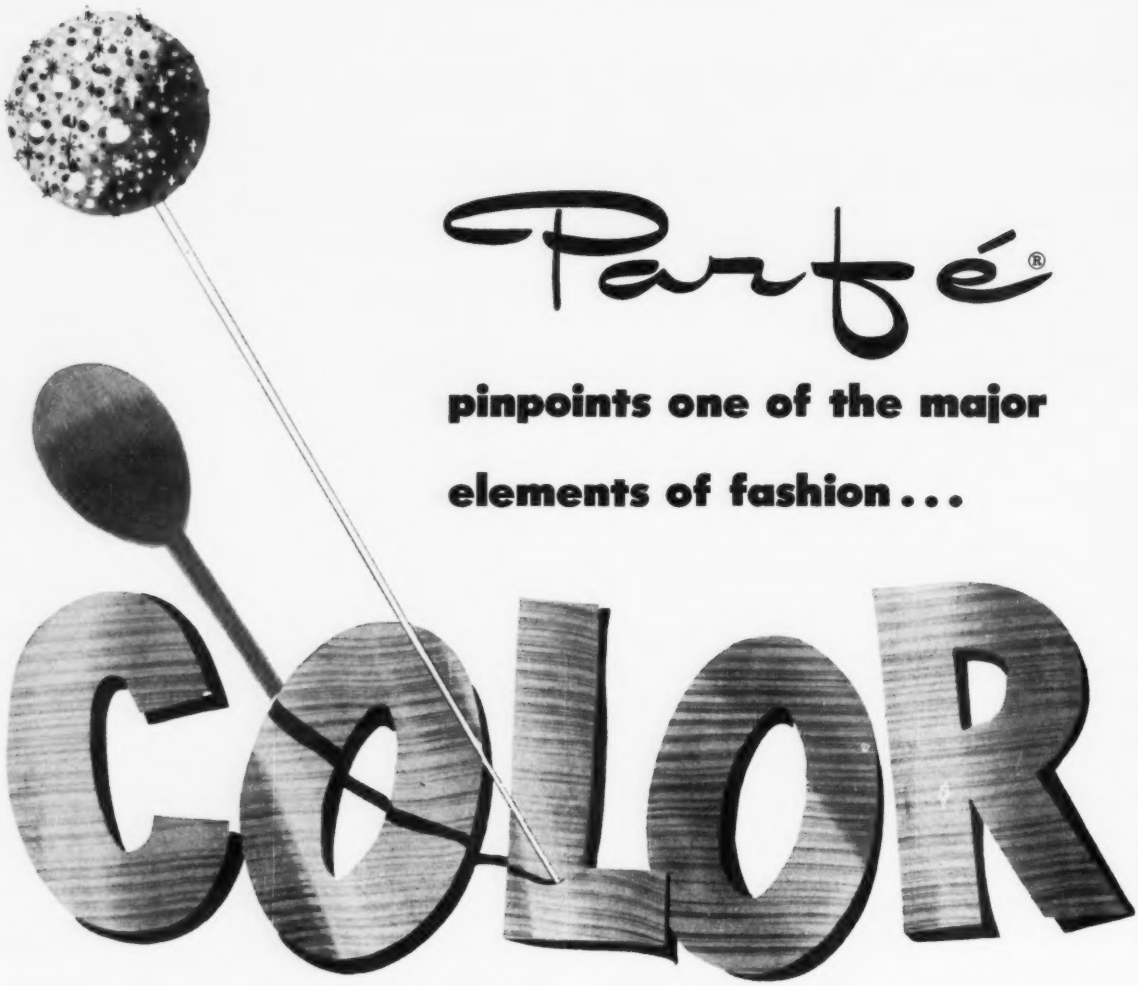
* **Better permanent wash-and-wear finishes with a wide range of excellent "hand" properties**
* **Reduced needle cutting**
* **Greater resistance to creasing**
* **Increased seam strength**

Emulsions of A-C Polyethylene are equally effective with synthetic and natural fibers, or blends. Properly formulated, they do not retain chlorine, keep whites *white*, resist scorching at elevated temperatures, and do not affect dye shades or lightfastness properties.

Make A-C Polyethylene a part of your present finishing practice! Your textile chemical specialties emulsion supplier either has an A-C Polyethylene finish or can formulate one for your specific needs. (We are manufacturers of Emulsifiable A-C Polyethylene resin, not finishing emulsions.) Investigate this superior finishing agent *now*—your fabrics deserve it! Just write or telephone today for complete information.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION
Dept. 552-BJ, 40 Rector Street
New York 6, N. Y.



Women's fashions are concerned primarily with three major elements: line, texture, and color.

Parfé . . . the new yarn creation by Bemberg . . . brings a new dimension to the vital factor of color. Color is spaced intermittently along the entire length of Parfé in two effects: a long span of color with long space intervals, and a short span of color with short space intervals.

With amazing ingenuity, fabric stylists have combined Parfé with other yarns, natural and synthetic, and with itself (used in both warp and filling) for unique and original color effects with exciting fashion possibilities.

Because the colors of Parfé are rendered as fast as solution dyed shades by a special Bemberg process, fabrics of Parfé may be overdyed for spectacular styling achievements.

Fabrics of Parfé are washable, color fast, and shrinkage controlled and are available with certified wash-and-wear performance, if desired.

Bemberg®
ARISTOCRAT® OF RAYON YARN

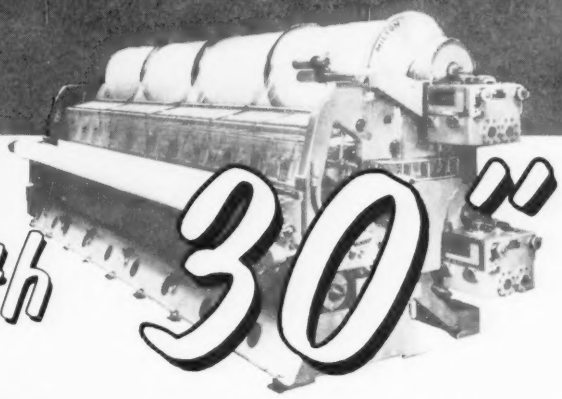
Parfé is American Bemberg's registered trade mark for cuprammonium rayon yarn.

AMERICAN BEMBERG • Main Office: 261 Fifth Avenue, New York 16, N. Y. • Plant: Elizabethton, Tennessee

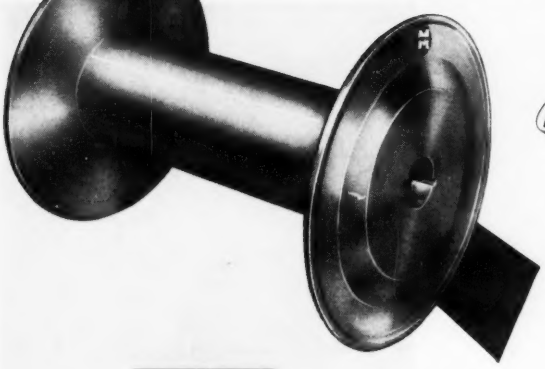
ON OUR 30th ANNIVERSARY . . .

Announcing ANOTHER MILTON FIRST!

ALUMINUM ALLOY TRICOT & RASCHEL BEAMS



with 30" diameter forged heads



First with 13¾" then 21" and now 30" diameter FORGED HEADS for use with nylon, rubber, acetate or other yarns! Milton's new 30" beam will accommodate *twice the amount of yarn* now put on 21" diameter beams. Down time and threading-in operations are *cut in half!*

HEADS

Forged, heat treated aluminum alloy. Designed for maximum strength and light weight. Thickness: 1¾" for nylon, 1¼" for other types of yarn. Bore of heads: 4½" or 6" diameter. Inside faces smoothly machined to 40 to 60 micro inch finish.

BARRELS

Extruded, heat treated aluminum alloy tubing. Nominal diameters: 12-inches for nylon service, 10-inches for acetate and other yarns.

CONSTRUCTION

Heads are secured to barrels by means of continuous automatic submerged-arc weld. Finish machining is done after welding, assuring a concentric, balanced, true-running beam, free of mechanical joints.

Milton was FIRST to offer the advantages of the greater strength and ductility of forged aluminum beam heads, as compared to those made from castings. Milton Beams of this type have been in service for more than ten years, and all of the experience and advantages are now incorporated in the new 30" diameter beam!

The new 30" Milton Beam has been subjected to extensive testing over a period of two years. The result is a strong, rugged product with a minimum of head deflection. Destruction tests have proven that it will withstand pressures far beyond the load imposed under normal operating conditions.

Your inquiries are invited . . .
write or phone for further information.
Milton sales engineers are at your service!

SEE THEM AT THE K. A. E. Booth 335

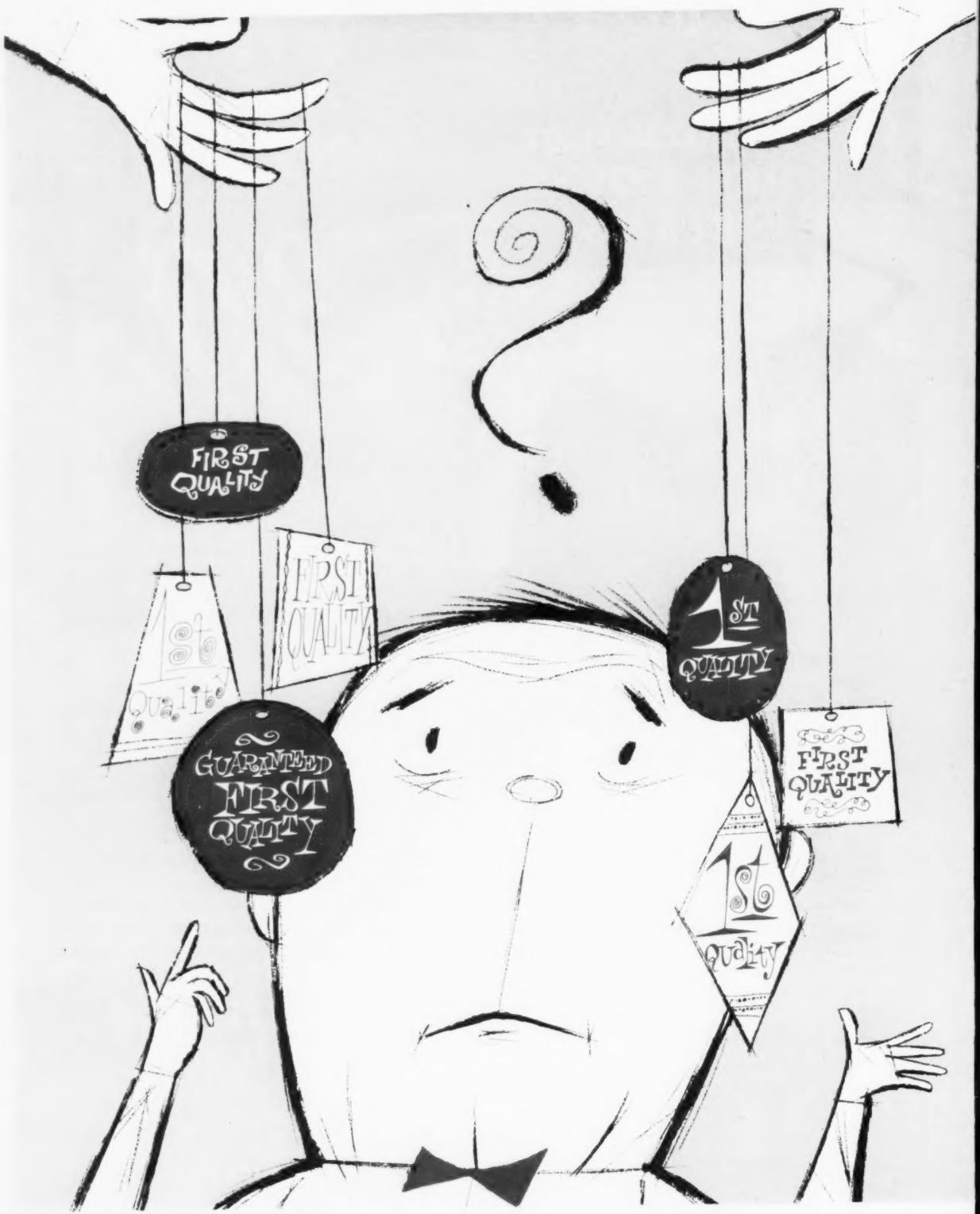
Thirty Years of Dependability in Yarn Beams

MILTON MACHINE WORKS, INC.

DESIGNERS • ENGINEERS • MANUFACTURERS

MILTON • PENNA.

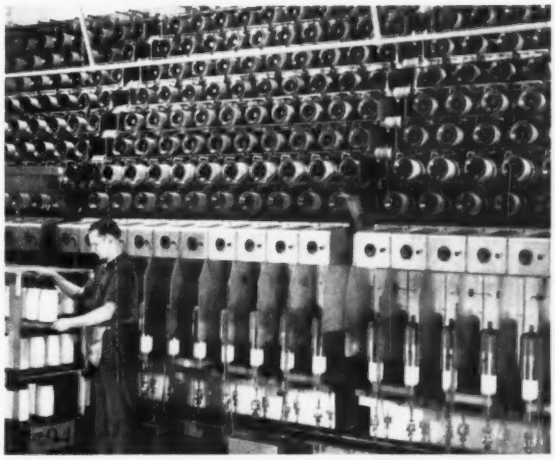
what do


FIRST QUALITY
1st Quality
GUARANTEED FIRST QUALITY
1st QUALITY
FIRST QUALITY
1st Quality

they mean by first quality?

NO RAYON YARN CAN BE COMPLETELY FREE OF FLAWS!

But... I.R.C. CONTINUOUS PROCESS RAYON COMES AS CLOSE AS MECHANICALLY POSSIBLE TO RUNNING PERFECT INCH BY INCH... UNIFORM MILE AFTER MILE! AND IT COSTS NO MORE!



Unless you're buying I.R.C. Continuous Process Rayon, the "first quality" yarn you're using is *not* actually first quality!

It may be *labeled* "first quality." But the yarn you're getting has imperfections that end up giving you *too many* fabric seconds!

Only I.R.C. Continuous Process rayon yarn can be virtually flawless, because it alone is made by a *continuous* process... a process that carries the yarn in one continuous vertical flow from the spin-bath to a twisted package.

No hands damage it... because no hands touch it en route!

You are not robbed of first class profits on first quality goods.

Yet you pay no more for I.R.C. Continuous Process rayon yarn, yarn that's as perfect and uniform as it is mechanically possible to produce.

You pay no more... and it saves you plenty!

I·R·C

Industrial Rayon Corporation
Cleveland, Ohio

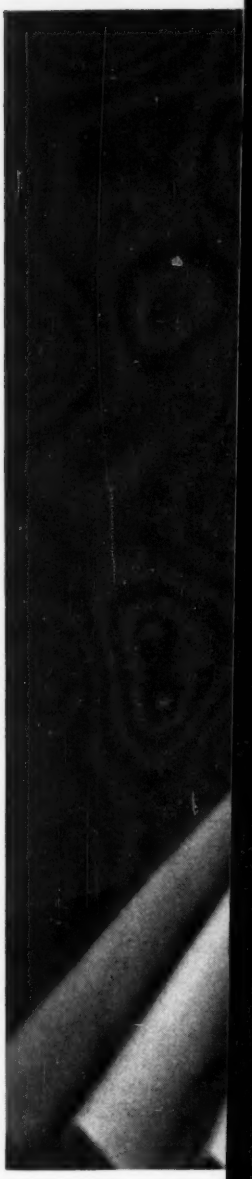
660 Union Commerce Bldg., Cleveland 1, O.
500 Fifth Ave., N.Y. 36, N.Y.
627 Guilford Bldg., Greensboro, N. C.

Producers of Continuous Process Rayon Textile Filament Yarns. Tyrex* Cord & Fabric for Tires. Nylon Staple.

*Certification mark of Tyrex Inc. for viscose tire yarn & cord.

#2 in a series of ads reviewing the "reasons-why" for the consumer acceptance of Arnel

ARNEL'S "STAMPS" OF CONSUMER APPROVAL



Separately . . . and in combination . . . these "stamps" of approval are working for you in the consumer market just as successfully as you work with Arnel triacetate in the mill.

You accept Arnel for its running efficiency and processing flexibility. The consumer accepts it not only for its beauty but for its ease-of-care and styling versatility. And part of that acceptance is PERMANENT PLEATING.

To the consumer:

1. 100% Arnel fabrics are permanently pleatable.
2. These permanently pleated Arnel fabrics will withstand repeated hand launderings, without the need for pressing.
3. In many combination fabrics, such as Arnel and cotton, and Arnel and rayon, excellent pleating can be obtained. (The pleats are made to run across the Arnel—the permanently pleatable member.)
4. All fabrics carrying the official Arnel symbol have been pretested for performance claimed—including permanent pleating. (Tests are conducted free of charge by the Celanese Corporation of America).

To take advantage of the great consumer acceptance of Arnel, let Celanese work with you to develop new construction in Arnel fabrics. Booklets 12A, 13A and 14A, containing the important technical procedure and facts about Arnel, are available by writing Celanese Corporation of America, Box 1414, Charlotte, N. C.

Celanese® Arnel®

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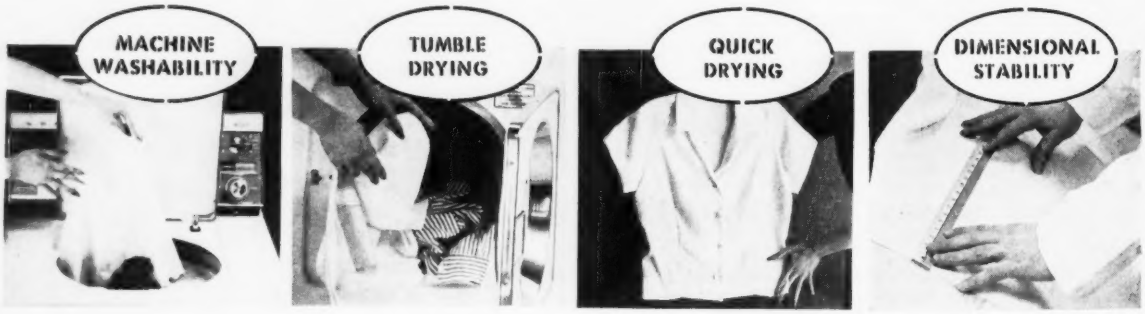
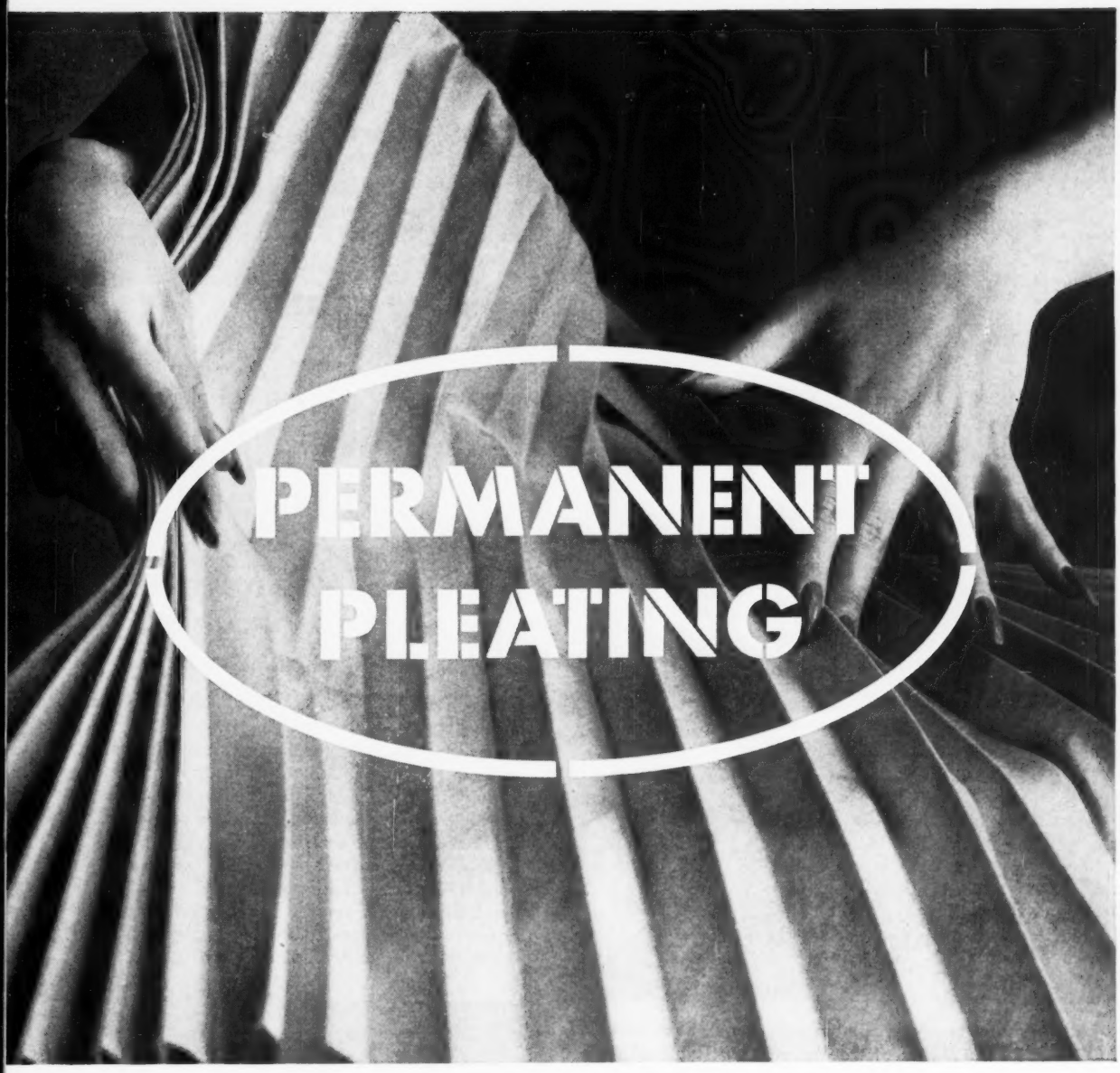
Room 10-141 Merchandise Mart, Chicago 54, Ill.; P. O. Box 1414, Charlotte 1, N. C.
200 Boylston St., Chestnut Hill 67, Mass.; 3179 Maple Drive N. E., Atlanta 5, Ga.

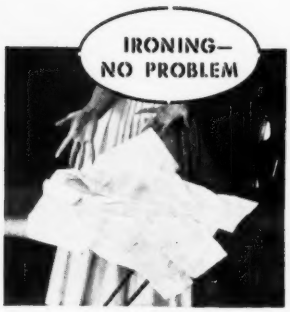
Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Ave., New York 16, N. Y.

In Canada: Chemcell Fibres Limited, 1600 Dorchester Street West, Montreal, Quebec



Arnel . . . a





ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

Celanese contemporary fiber

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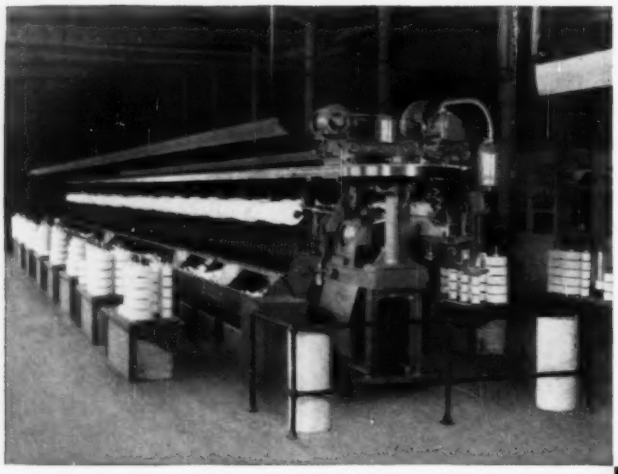

A Barber-Colman Automatic Spooler of the Multiple-Count type, which is ideal for sale yarn mills and producers of piece goods who use various counts and different mixtures.

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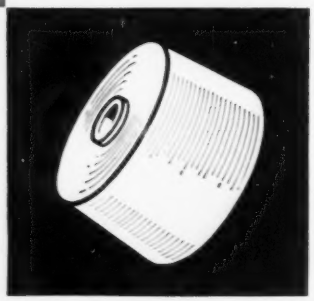

Cone package, with 4° taper, from Barber-Colman Type DD Automatic Spooler.

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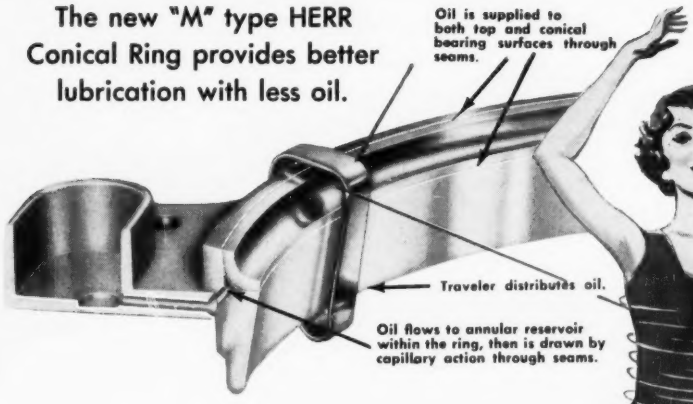
The new "M" type HERR Conical Ring provides better lubrication with less oil.


Oil is supplied to both top and conical bearing surfaces through seams.
Traveler distributes oil.
Oil flows to annular reservoir within the ring, then is drawn by capillary action through seams.

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New "M" type

Conical Rings and Flyers

For spinning and twisting of medium and heavy counts of yarns.

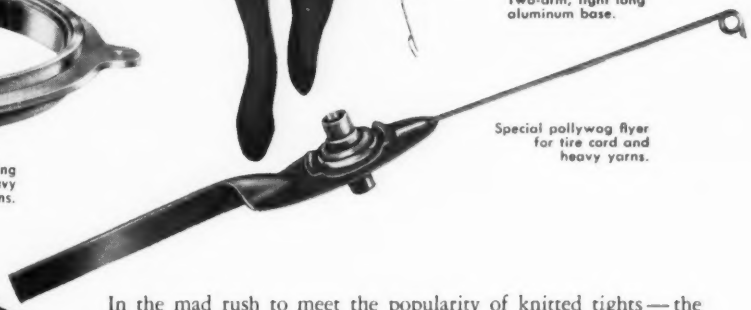
For spinning of medium to light counts of yarns.

CORRECT SPINNING OR TWISTING OF ANY YARN

Four-arm long brass or aluminum base.

Four-arm short brass or aluminum base with balance bail wire.

Two-arm, light long aluminum base.



Special pollywog flyer for tire cord and heavy yarns.

In the mad rush to meet the popularity of knitted tights — the most extraordinary in years — the yarns made with Herr Conical Rings and Flyers are helping manufacturers meet high production operation with garments that have just the right stretch and fit. Tights made of HELANCA stretch yarns, produced with Herr equipment, have the curvy, stretchy, sleek look that brings the highest prices.

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New "M" Type Herr Conical Rings are self-lubricating with minimum oil consumption and long traveler life. Result is clean yarn, especially valuable in handling new bulk or stretch yarns.

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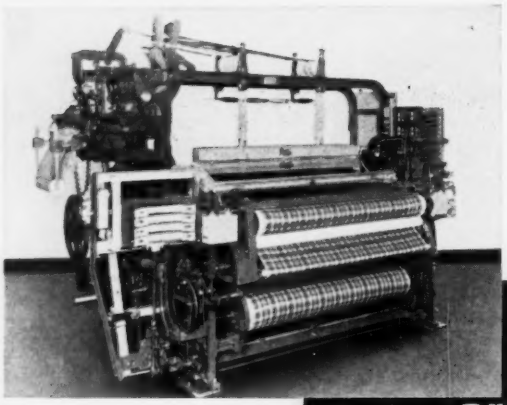

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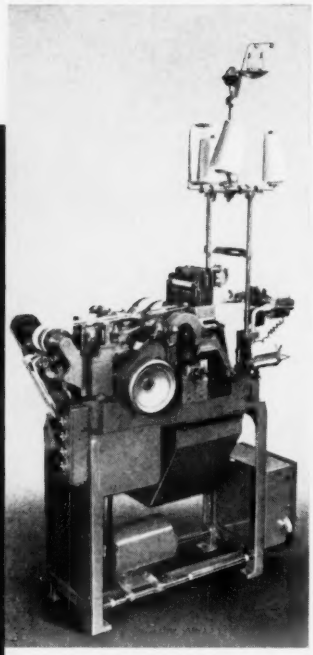
Here are four of C&K's Proven Producers of Today's Most-Wanted Patterned Fabrics



M-P...

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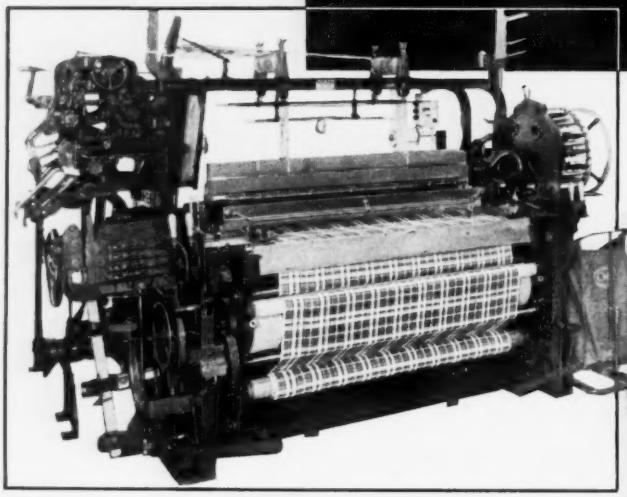

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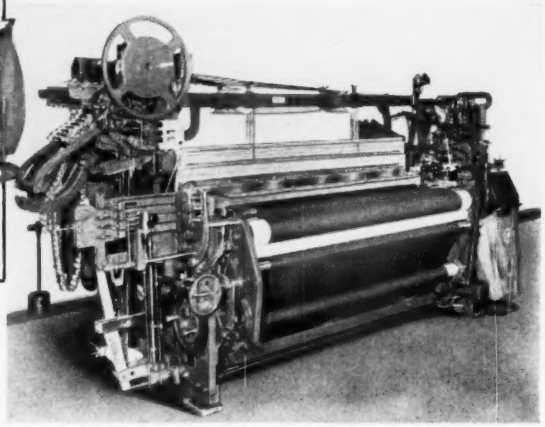

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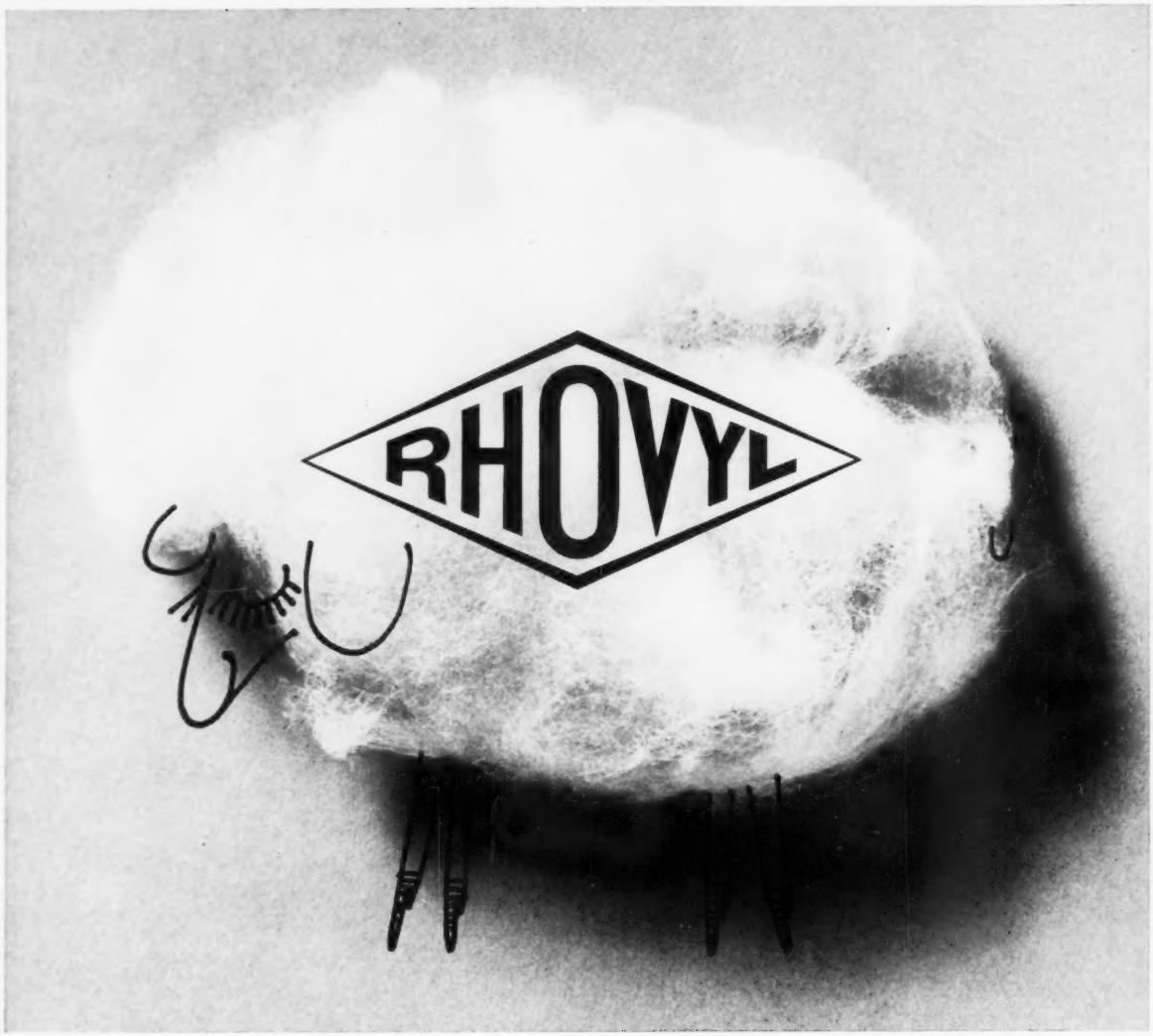

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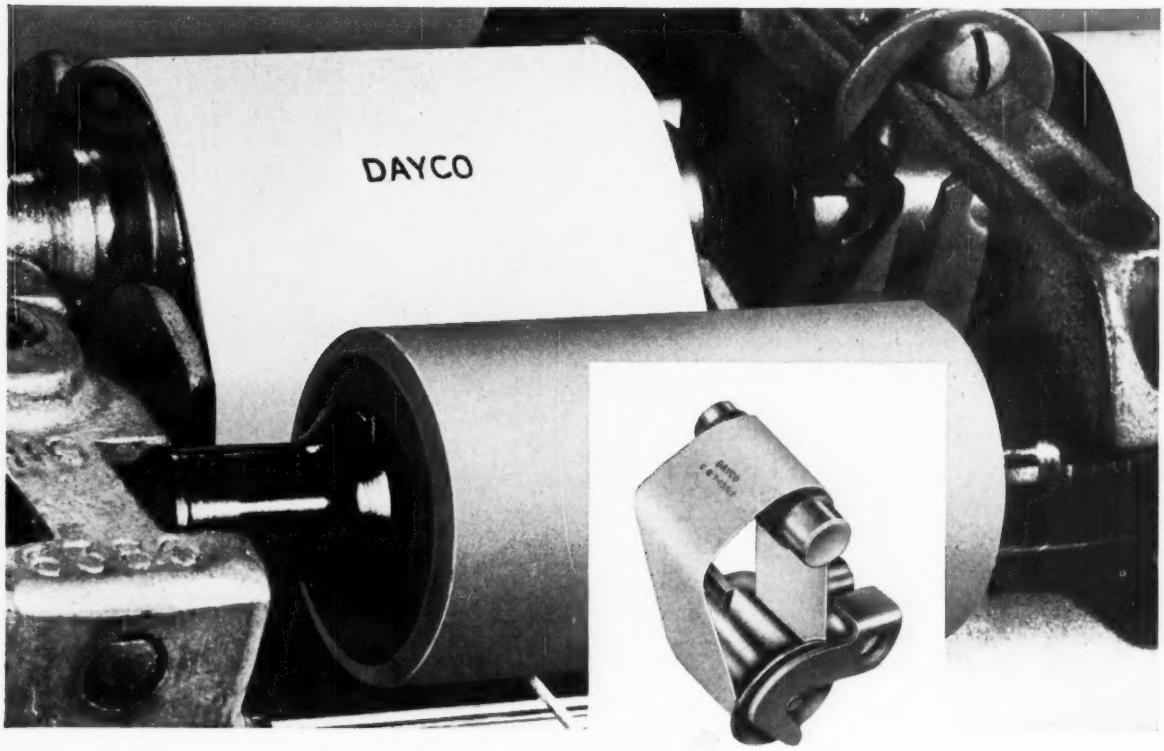

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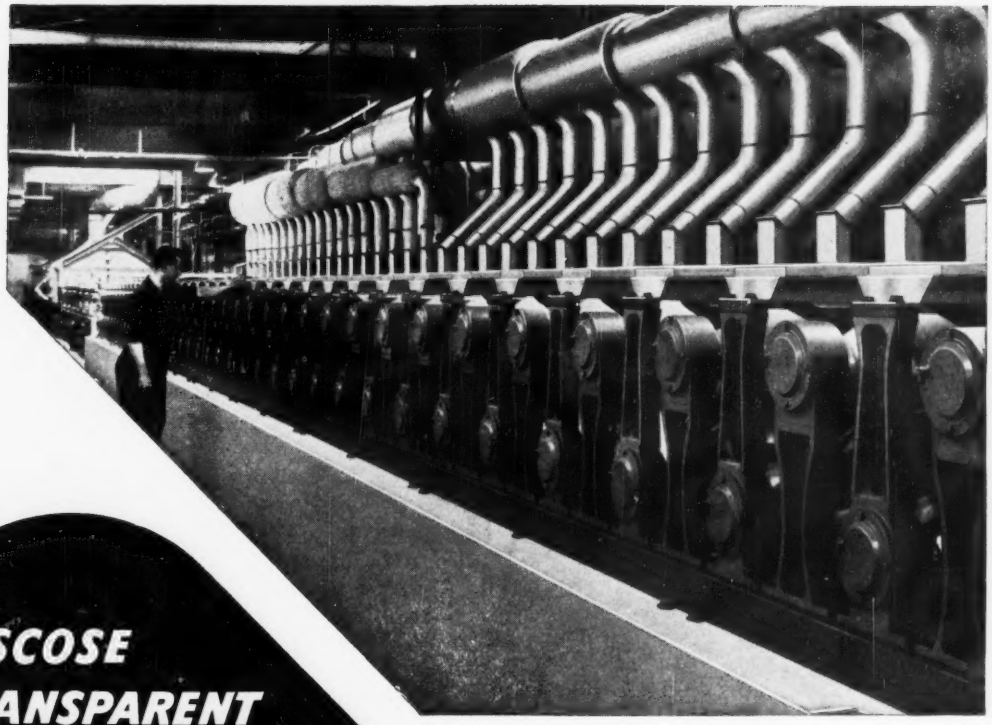
Photograph by courtesy of Transparent Paper Limited, Bury



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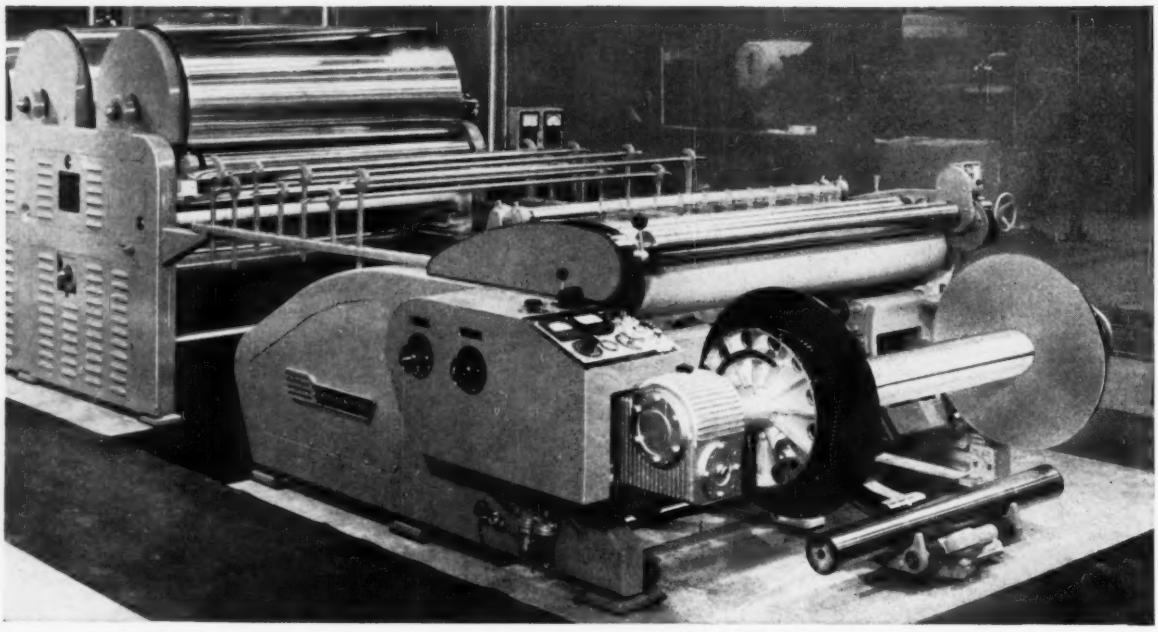

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POLY-IONIC SOFTENERS

for cottons and synthetics!

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produces a soft, full hand with exceptional drape.
non-chlorine retentive — does not yellow white fabrics even at elevated temperatures — miscible with resins and most other finishes

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for greater surface lubrication

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ALL THREE POLY-IONIC Softeners give cottons and synthetics a FULL and PLEASING hand, with these additional benefits!

- **better crease recovery, better abrasion resistance**
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The three types — Non-ionic, Cationic and Anionic — offer you a range of outstanding softeners to meet your specific needs.

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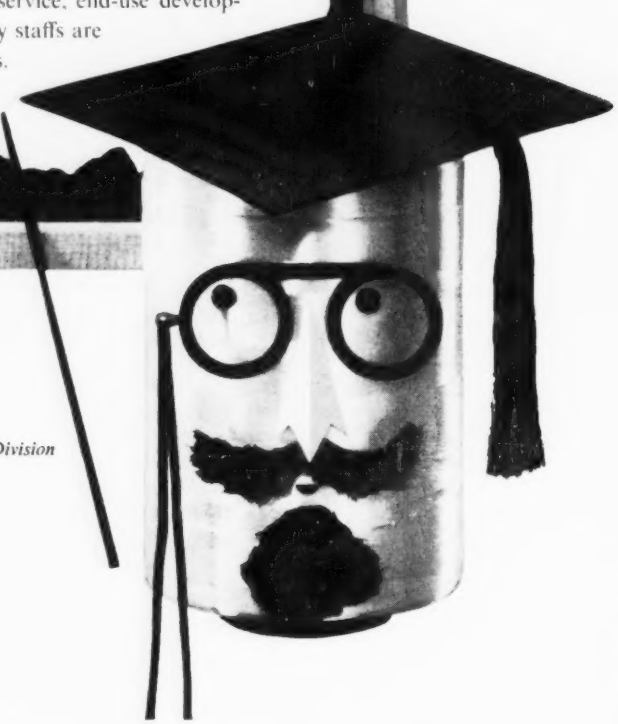
Easy adjustments like this pay off in excellent results with Textured Caprolan*. Our technical service, end-use development and fiber application laboratory staffs are ready to help you at any time. Call us.



*Trade Mark—Allied Chemical's polyamide fiber

Fiber Sales and Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N. Y.

#7 of a series

MODERN TEXTILES
Magazine

Publisher's Viewpoint

New Fibers Require New Names

It is a well-established custom in the manmade fibers industry, that new and distinctly different classes of fibers, as they appear commercially, be given new and distinctive names. Polyamide fibers, for example, the first important class of noncellulosic fibers to be introduced, were given the name "nylon" to distinguish them from rayon and acetate.

And so, following nylon, when during the past ten years a host of new fibers appeared, each distinctive class of these fibers was given a distinctive new generic name.

The custom and principle of giving new names to new fibers has been recognized by the Federal Trade Commission in drawing up its proposed new rules for enforcement of the recently enacted Textile Fibers Products Identification Act. Rule 7 proposes as many as 15 different generic names for noncellulosic manmade fibers along with definitions for each. And the indubitable fact that the future will see the commercial appearance of still newer and different fibers is recognized by proposed Rule 8 which describes a procedure for establishing generic names for new fibers.

In view of the fact that the Commission thus recognizes that distinctively different fibers are entitled to distinctively different names, it is indeed unfortunate, in fact, quite inexplicable, that the Commission does not accord to cellulosic fibers the same rights as it does noncellulosics. With what appears to be a strange disregard of its own principles as exemplified in Rule 8, as well as long-established industry custom, the Commission, in its proposed Rule 7, virtually shuts the door to the granting of new names for distinctive new fibers containing cellulose. Rule 7 defines rayon as "a manufactured fiber formed from regenerated cellulose with less than 15 per cent by weight chemically combined substituents."

By this definition, a new cellulosic fiber with properties and functional characteristics very different from rayon, must be classed as rayon and denied a generic name of its own if its chemical composition is at least 85% regenerated cellulose.

A case in point illustrating the incorrectness of the Commission's position with regard to new generic names for new cellulosic fibers and at the same time closely related to what we believe is the Commission's erroneous proposed new definition of rayon is found in "lincron" which is the generic name Courtaulds (Alabama) Inc., has asked the Commission to approve for its crosslinked cellulosic fibers.

Courtaulds, with what we think was overwhelming conviction, demonstrated in a hearing before the Federal Trade Commission that its new crosslinked cellulosic fibers are markedly different from rayon in functional properties and behavior in textile processing. Courtaulds' point was reinforced by testimony from such highly regarded authorities on fibers science as Dr. Herman Mark, head of the Institute of Polymer Research at Brooklyn Polytechnic Institute and Dr. Walter Hamburger of the Fabric Research Institute.

Another case bearing strongly against the Commission's present attitude is found in the new high modulus cellulosic fibers now emerging into commercial use. They are described in detail on page 73 of this issue. Although their functional properties are extremely different from rayon, they would have to be classed as rayon and be denied the distinctive generic name they deserve if the Commission's proposed definition of rayon in Rule 7 is left unchanged.

For the sake of future growth in the manmade fiber industry, and for the sake of accuracy in nomenclature, with all that it means both to the textile industry and consumers, it is to be hoped that the Federal Trade Commission will accept the plain weight of evidence and agree that crosslinked fibers and the new high modulus cellulosics are deserving of new generic names distinct from rayon.

A. J. McCullough

OUTLOOK
IN TEXTILE MARKETING

By the Editors

Some idea of the impact that the new Textile Fiber Products Identification Act will have on textile marketing was foreshadowed last month in Washington.

In the hearings held by the Federal Trade Commission on its proposed rules for enforcing the Act, some 60 witnesses offered statements, most of them suggesting changes in the rules. Many of the speakers represented trade associations; some represented individual firms.

To support their oral statements, a veritable mountain of written documents were left for the Commission to study. The new law will go into effect in March, 1960. The rules for its enforcement will be issued next June.

In toto, a wide ranging variety of opinions and suggestions regarding the proposed rules were laid before the Commission.

The impression gained by MTM's editor who was present was that, with the exception of the American Farm Bureau Federation and the National Cotton Council, few of the speakers showed any enthusiasm for the new labeling law or the rules that will enforce it.

Perhaps the most forcible criticism of the law and the rules was expressed by Sidney S. Korzenik, executive director of the National Knitted Outerwear Association.

Speaking about the difficulties presented to knitwear makers by the confusion caused by two sets of labeling rules—those of the Wool Products Labeling Act and those of the new Textile Products Identification Act—Korzenik said: "We deem it unfortunate that textile labeling legislation should have become so much the creature of special fiber interests as to have produced two different sets of statutory requirements—one satisfactory to the wool growers and the other to the cotton growers and both at the primary expense of the nation's apparel producers."

Among the aspects of the new rules which evoked the greatest concern from industry spokesmen were fiber tolerances, generic names of fibers as defined in the proposed rules, and procedures for establishing new generic names for manmade fibers that may come along in the future.

The American Cotton Manufacturers Institute, for example, opposed the 3% tolerance of fiber content in the proposed rules. Such a figure, it argued, would "encourage wilful misrepresentations of fiber content to the limit of the permitted tolerances".

A minority of the ACMI committee on fiber identification expressed, however, an opposing view. The minority's view, said to represent a number of mills which are members of ACMI, was that the 3% tolerance figure "would give adequate and fair protection" and should be retained in the rules.

To the definitions of generic names for fibers as set out in the draft of the rules a number of exceptions were voiced.

The Man-Made Fibers Producers Association argued at length against the definition of rayon as a fiber made from "regenerated cellulose with less than 15% by weight chemically combined substituents." The Producers urged that the existing definition of rayon as fibers "composed of regenerated cellulose" be used instead.

A similar proposal was made by Courtaulds (Ala.) Inc. which also urged the Commission to establish the name "lincron" as a generic name for crosslinked cellulosic fibers. (See Publisher's Viewpoint on page 29 of this issue).

Rhodia, Inc., took exception to the term "vinyon" as a generic name for vinyl chloride fibers. Rhodia, a producer of these fibers, suggested that "vinyl" or alternatively "PVC" or "polyvinyl chloride" be used as the generic name for this class of fibers.

The proposed definitions of acrylic and modacrylic fibers were objectionable to Union Carbide Corp., producer of Dynel.

Carbide's spokesman said that his company would soon introduce a new fiber, now called Fiber T, with an acrylonitrile content between 60 and 75%. This would cause it to fall within the Commission's proposed definition of modacrylic fibers which, he said, would be unfair to Union Carbide. He suggested a broader definition of acrylic fibers that would include the new Fiber T.

BIG CHANGE DOWN UNDER

Long a quiet area in textiles, the underwear industry today is stirring with new ideas, searching for new markets. Heading its trade association at this hour of re-appraisal is open-minded, friendly Thomas O. Moore of P. H. Hanes Knitting Co.

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

AFFABLE, soft-spoken, Tom Moore, vice chairman of the board of P. H. Hanes Knitting Co., the country's largest knitwear manufacturer, begins his second term next month as president of the Underwear Institute. A modest man, Moore much prefers to talk about Hanes and about the underwear industry and its trade association rather than his own career.

A lawyer by profession, Moore is the son of a lawyer. He was born in 1900 in Greenville, in eastern North Carolina, not far from New Bern. His ancestors have been native North Carolinians from far back in earliest colonial times. Moore was educated at Virginia Military Institute, and at the end of his second year in 1918, he hastened to enlist in the U. S. Army in the hope of putting his military education to the practical test of combat in the last days of World War I.

He reached France at the end of the war, and when the fighting ended, somehow managed to get himself on the staff of the United States Embassy in the busy and momentous months when Wilson went to that city to participate in the drawing up of the Treaty of Versailles.

The young man from North Carolina had a chance to see the great men of the time—such historic figures as Clemenceau, Lloyd George, Wilson, and many lesser great men of the hour—bemedalled generals and silk hatted heads of states, as they hurried from conference to conference; more important to himself and his subsequent career, Moore hardly turned 18, saw something of the great international world and its ways of living; a broadening and educative experience that has helped him in later years to acquire a breadth of understanding of the world and its problems that life as a North Carolina lawyer and knit goods manufacturer may not otherwise have given him.

When the exciting postwar and treaty-making days in Paris were ended, Young Moore hurried home to enroll at the University of North Carolina in Chapel Hill. Cramming undergraduate work and the study of law into a hard-working three years, he took his A.B. degree with honors, in 1921 and the next year passed the bar examination in his home state. He joined his father's law firm in New Bern which later, in recognition of his energetic and successful work as a young lawyer, changed its name to Moore and Moore—a proud day for young Tom Moore.

In 1937, after 15 years of practicing in North Carolina with growing reputation as a lawyer especially active in corporate legal work, Moore joined Hanes as general counsel. In 1941, he became secretary of the company and a member of the board of directors; vice president in 1946, and in 1957, he assumed the post of vice chairman of the board.

These are the basic facts of Moore's business career—facts hard to get him to talk about since his great interest in life and the subject he likes most to discuss is the P. H. Hanes Knitting Co. Along with the other key people at Hanes, notably P. H. Hanes, chairman of the board and his vigorous young son, P. Huber Hanes, Jr. who is president and general manager, Moore has an immense and wholly justified pride in Hanes Knitting. Today Hanes, with more than 4,000 employees and 500 circular knitting machines, its highly modern and efficient dyeing and finishing operations, its huge cutting and sewing departments, and, outstandingly, its unique and famous merchandising operation, is one of the truly noteworthy producers of knitted underwear, sleepwear, sportswear and baby wear.

In its big, solidly constructed, beautifully maintained plants in the heart of Winston-Salem, N. C., there is an air of dependable strength, of long-nurtured and carefully maintained success. The Hanes Knitting operation is indeed one of the most substantial and respected in the whole wide textile industry.

The present distinguished eminence of Hanes in the knitting industry is the result of more than a half century of steady growth guided by wise and energetic leadership. Hanes Knitting was set up in 1902 by Pleasant Henderson Hanes, the father of P. H. Hanes. Pleasant Hanes and his brother, John H. Hanes, were North Carolina farm boys who had done remarkably well in the tobacco business in the latter decades of the last century. In 1899 they sold their tobacco business to the Reynolds' interests for amounts which left them rich men.

Looking around for something new to keep them busy, they separately went into textiles. John Hanes

started the business which has grown with the years to be the present Hanes Hosiery Mills, one of the largest makers of circular knit hosiery in the country. Pleasant Henderson Hanes along with his two sons, P. Huber and Will, set up the P. H. Hanes Knitting Co. to make knitted underwear. In time, P. Huber Hanes succeeded his father in the management of the business, becoming president and general manager at the death of Pleasant Hanes in 1925.

In the years since P. H. Hanes Knitting Co. began to make underwear with the modest equipment of 12 knitting and 50 sewing machines, the firm has worked consistently to establish itself strongly in the minds of consumers throughout the United States as a manufacturer of high quality branded garments. In this effort, so typical of the best trends in manufacturing consumer products of all kinds in the United States today, Hanes has been a courageous pioneer. Hanes' first advertisement for its then chief product, heavy winter underwear, appeared in the Farm Journal in 1912.

Heavy Advertising to Consumers

As the company's product line spread from old-fashioned underwear into a steadily widening variety of knitted garments, its advertising efforts also broadened and deepened. Last year, it spent more on advertising than ever before in its history. Magazines, newspapers, radio and network television were among the media lavishly used to tell consumers about the merits of Hanes underwear, sleepwear, baby wear and leisure garments. Hanes management had the satisfaction of knowing, when the year's sales figures were in, that their determined and courageous merchandising of Hanes own quality branded merchandise paid off: in 1958 the company sold more units than ever before in its 57 years of existence.

Vigorous selling, and extensive advertising is only one side of the achievement of Hanes in establishing its name as one of the best known to American consumers. The other and equally important side of the Hanes success lies in constant improvement of manufacturing methods to insure high quality branded garments at competitive prices. And such improvement means the unflagging modernization of the company's plants with regularly planned investment in new machinery.

Since 1945 Hanes has invested more than $10 million in new equipment. Currently the company is getting ready to start production at a new plant on the outskirts of Winston-Salem which will provide 150,000 square feet of up-to-the-minute manufacturing space for the production of knit cloth. In the past few years, other new plants were established at Sparta (1953) and Jefferson (1956) in North Carolina and at Galax, Virginia (1957).

Pension Plan for Employees

Along with its highly efficient operations in both merchandising and manufacturing, Hanes is a leader of the industry in employee relations. According to Tom Moore, Hanes' wages are 20 cents an hour higher than the average wages in the underwear industry. The company was among the first in the industry to put into operation a pension plan (1946). Today 125 employees have been retired and are drawing pensions.

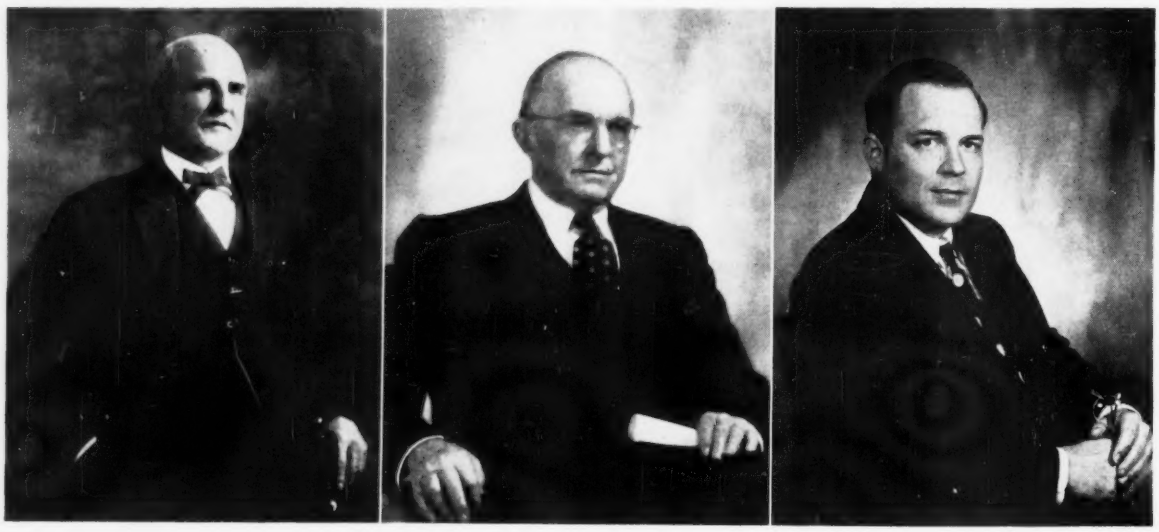
Associated as he has been for so long in the upper levels of management of so successful a company in the underwear field as Hanes, Tom Moore was an inevitable choice to head the trade association of his industry. The Underwear Institute, as it has been called since 1934, is one of the oldest trade associations in the United States. It was organized as long ago as 1865 as the National Association of Knitwear Manufacturers. It changed its name in 1875 to the National Association of Knit Underwear, thus unaccountably as some think narrowing its area of activity. It assumed its present name in 1934. Its 150 members account for not less than 85% of the total production in the United States of knit underwear, sleepwear and allied garments such as leisure shirts and baby wear.

Moore heads the organization at a time when its members, for the most part large, long-established manufacturers of fairly staple items, appear to be entering upon a period of soul-searching and reappraisal of both their own operations and the function of their trade association. On the whole, the tenor of this self-questioning seems to point in the direction of growth and expansion for both their industry and their industry's trade association.

In good part, the re-examination of industry goals is being encouraged by the Underwear Institute's new managing director, young vigorous, open-minded

(Continued on Page 54)

THREE GENERATIONS OF KNITWEAR LEADERSHIP—Shown on the left is Pleasant Henderson Hanes, the founder of P. H. Hanes Knitting Co. In the center is his son P. H. Hanes, now chairman of the board. On the right is P. Huber Hanes, grandson of the founder, who is president.



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* Trademark of Dupont's acrylic fibre.
** Trademark of Dupont's polyester fibre.

Ballston moves with the times

Deeply entrenched in work socks, this company now pushes into the growing leisure wear market

BY THE EDITORS

IT IS AUTHORITATIVELY estimated that in the United States today there are 23 million boys and girls between the ages of ten and twenty. Virtually every one of these young people own and wear at least one pair of white athletic socks—do you know any exceptions? Add to these young consumers many more millions of Americans of all ages who wear these socks at one time or another in their leisure or labor activities and you have a big, really tremendous market for these utilitarian items of apparel.

To supply this market keeps an important, if little known, segment of the hosiery industry busy. And one of the busiest of these hosiery knitters is Ballston Knitting Co., Inc. with two-plants—one at Ballston Spa and the other at nearby Stillwater, N. Y. Along with athletic socks, Ballston also makes work socks and the longer colored top hunting socks, all adding up to a total yearly output of some million dozen pairs.

Sock manufacuring at Ballston today, after 40 years of growth, is a completely integrated process. Starting with fiber, the company spins its own yarns, knits the socks, dyes and finishes them and then packs them for distribution throughout the country, some under its own well-established Ballston label and others under brand names of its customers. Socks are knitted of wool, and wool-synthetic blends including nylon and rayon as well as some wool-cotton yarns.

Ballston Knitting Co. was started in 1918 by the late Floyd J. Shutts, an Amsterdam, N. Y. wholesaler of work socks. By 1929, the company has become sufficiently large to open a second plant at Stillwater to make athletic and hunting socks. In 1934, following the death of Shutts, the company passed under the management of the late Walter J. Mooney, who was then one of the leaders of the garnetting trade as head of Frank B. Graves Co. of Albany. When the elder Mooney died in 1955, his son, young, energetic Walter J. Mooney, Jr., took over as president.

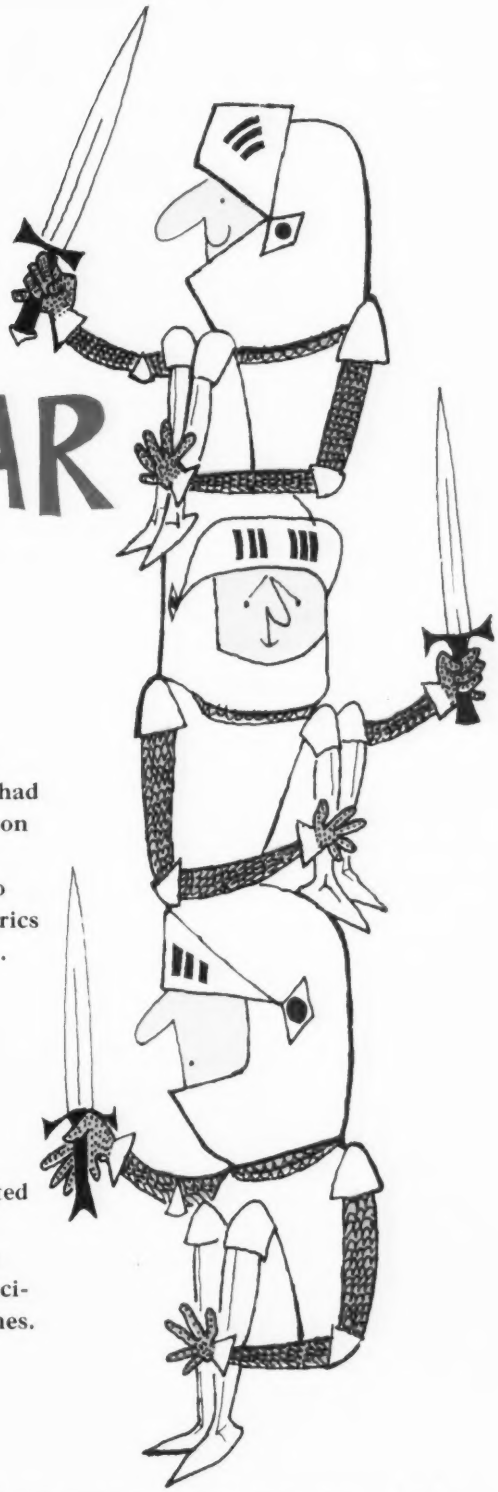
Under the younger Mooney's leadership, Ballston aiming at a deeper penetration into the profitable "youth market," has steadily modernized its plants. Along with improvements in manufacturing methods and equipment, the company has intensified its marketing and advertising efforts directed at this growing area of hosiery consumption. Mooney and his associates are convinced that the growth potential in this direction during the next five years will be substantial and rewarding

In yarn preparation at Ballston, operations begin with picking and blending and then move on to carding on the woolen system. Sliver is taken from the cards with tape condensers. The condensed card sliver then goes to the roving frames, and from them to spinning by both ring spindles and mules. At the Ballston plant there are ten sets of woolen cards.

(Continued on Page 54)

MODERNIZED CARDING—New tape condensers at Ballston's big plant in Ballston Spa, N. Y. increase output of card sliver for knitting yarns.

THIS WAS WASH and WEAR TOO!



Ol' King Arthur clad *his* knights in truly "drip-dry" apparel—wrinkle-free and easy-care. But, while these garments may have had many fine and desireable qualities, it was soon learned that *comfort* wasn't one of them! Today's Wash-and-Wear *can* be different! No longer need the comfort properties of fine fabrics be sacrificed on the altar of convenience. . . .

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TEXTILE NEWS

World Wide

BRITISH TEXTILE MANUFACTURERS were told again what's wrong with their industry. Sir David Eccles, president of the Board of Trade, said textile men aren't trying hard enough to sell in the U. S. Referring to textile exports, he said: "Are you doing as well as some other industries abroad? I do not think you are."

FROM WITHIN THE TRADE, British textile men heard Clyde E. Harrison, president of the Manchester Chamber of Commerce and managing director of English Sewing Cotton Co., urge a better system of industry-wide associations. He charged there were too many sectional groups, each aimed to protect its own segment and which "at times, conflict with the true interests of the industry as a whole."

UK COTTON SPINNING SITUATION is symptomatic of this kind of criticism. William Pickles, Amalgamated Cotton Mills Trust, Ltd., declared: "The spinning capacity in Lancashire far exceeds requirements in the foreseeable future." He urged the industry to curtail output in order to reduce excess capacity.

DUPONT WILL BUILD a Dutch acrylic fiber plant which will be operated by a new affiliate. The factory will produce 15 million pounds a year, with output slated to start early in 1961. Most of the production is expected to be sold in the Common Market area and the UK . . . . Du Pont has also formed a Swiss sales company, with headquarters in Geneva, to market the products turned out by its various European affiliates.

JAPAN FACES EXCESS CAPACITY in the rayon fabric industry. The Government has announced that it would buy and then scrap 29,600 spun rayon looms and 22,200 filament rayon looms. The Textile Poly Council is recommending that Tokyo forbid installation of additional rayon and cotton equipment which would tend to augment the country's productive capacity. Only synthetic fiber production would be excluded from the ban.

BIG JAPANESE COTTON MILL has announced that it would shut down five units as a result of the nationwide textile recession. Last September, the company—Kanegafuchi Spinning Co., Ltd.—cut wages and reduced operations. The latest decision would curtail activity in 30% of the firm's looms and 20% of the cotton spinning equipment.

ITALIAN TEXTILE FIRMS broaden contacts in Europe. Montecatini's new polypropylene fiber, named Moplen, is being licensed in France where Pechiney and the Societe Normande de Matieres Plastiques will be the producers. Snia Viscosa, meanwhile, may set up a Lilion nylon yarn and staple plant in the Soviet Union. And Marzotto of Valdagno, a major men's wool goods firm, is about to launch exports to East Germany.

SWISS DEVELOP NEW graphic arts textile product. Radunder & Co., at Horn, has announced the new product, called Topnyl, which is intended to replace paper in certain high quality printing uses. Product is a tightly woven nylon which, when specially treated, becomes welded so that the fibers cannot unravel. Its moisture repellent characteristics are said to make it particularly valuable for maps. The Swiss Topographical Service has just chosen this material for its new 1:25,000-scale maps.

AUSTRIA WILL HOLD a silk exhibition at the Dornbirn Fair from July 31 to Aug. 9. A silk trade meeting is scheduled to meet there at the same time. Synthetic fiber applications will also be shown.

GERMAN FIRM DEVELOPS new polyester finish for woven goods. Farbwerke Hoechst recently showed the anti-static material at the Frankfurt Fair. The finish is said to preserve the supple textile feel and to cost 2 to 3½¢ a yard extra. Older anti-static finishes often have a hard feel which prevents use on certain fabrics.

PRO-WOOLEN SLOGAN in Germany ("Wool is the Yardstick for Quality") appears to have been successfully beaten by the Man-Made Fibers Association which claimed the slogan gave wool an unfair advantage over competing fibers. It is not yet known whether German wool textile men will come up with a new slogan—or seek an appeal.

BURMA IS IMPORTING 100% nylon fabrics, some 300,000 yards, during March-May under new, lower import duties, 60%, compared to the former rate of 100%. A similar volume of rayon and spun rayon piece goods is also being imported.

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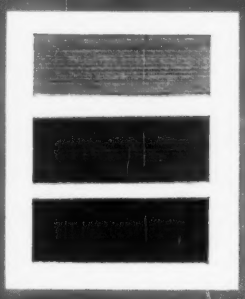
It will pay you to try Carbanthrene Vat Dyes soon. In addition to top quality dyes, you get National Aniline's experienced service and fast, dependable deliveries from nearby stocks. Call us today!



CARBANTHRENE NAVY BLUE RA DOUBLE PASTE

A new addition to the Carbanthrene range. Already gaining popularity in poplins and sateens used for rainwear. It takes a water repellent finish beautifully and stands up equally well under sunshine or showers. For additional information, write for Bulletin 448.

CARBANTHRENE YELLOW 3R PASTE

Here is a straight yellow that is unique for top light fastness as well as wash fastness. Excellent resistance to wet processing, too. Also recommended for tan and beige tones in dress goods, drapery and upholstery fabrics and carpeting. Write for Bulletin 384.

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Knitting Show Preview & Directory

INTEREST throughout the textile industry currently is focusing on the Knitting Arts Exhibition to be held in Atlantic City's vast auditorium May 4 to 8. According to advance reports, the exhibit this year will be the biggest ever staged in number of exhibitors, visitors, and variety of machinery and other products and services for the knitting trade on display.

Especially noteworthy at the exhibit this year will be the variety of knitting machinery demonstrated under actual operating conditions. Another important way in which his year's exhibit will be outstanding is in the increased number of displays by manufacturers of manmade fibers and yarns. Virtually every major producer of manmade fibers will display knitted products made with its yarns. Along with fiber producers, manufacturers of both manmade and natural spun yarns will have displays. Also there will be exhibits sponsored by most of the producers of textured manmade filament yarns. For the first time at the show there will be a display of yarn spinning machinery in actual operation.

As at past shows, MODERN TEXTILES MAGAZINE will have an exhibit and hospitality center at Booths 78 and 79. Readers, advertisers and other friends of MTM are invited to stop by for a visit.

This year's Knitting Arts Exposition, the 44th to be held, is again sponsored by the National Knitted Outerwear Association, the National Association of Hosiery Manufacturers and the Underwear Institute. Anyone desiring tickets may write to any of the sponsoring organizations or to the exposition management care of R. T. Kenworthy, Inc., 10 E. 40 St., New York 16, N. Y.

Exhibitors & Exhibits

ABERFOYLE MANUFACTURING CO.
PHILADELPHIA, PA.—(411-414, 417-418)

EXHIBIT: Combed, mercerized, natural and dyed yarns, as well as the newer synthetics such as Orlon, Dacron, Dacron/cotton, NyFoyle. Also products made from these yarns.
IN ATTENDANCE: J. P. Holt, J. S. Kenrick, E. J. Neal, A. S. Wilson, H. M. Detwiler, R. A. Field, R. R. Friedman, R. E. Broughton, R. F. Morris, David Gott, W. G. Vetterlein, J. P. Boger, Etherington Brothers, J. J. Neil, William Napier.

ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN, PA.—(150)

EXHIBIT: Bobbins and spools for the throwing of fine denier yarns.
IN ATTENDANCE: Henry W. Mack, Harold S. Barnes.

ALLIED CHEMICAL CORP.
NEW YORK, N. Y.—(205-206, 211-212)

AMERICAN ANILINE & EXTRACT CO., INC.
PHILADELPHIA 34, PA.—(390)

EXHIBIT: Chemical textile specialties.
IN ATTENDANCE: William J. Duddy, R. D. McCarty, Lynn Kippax, Martin H. Silberman, James H. Jones.

AMERICAN DYESTUFF REPORTER
NEW YORK, N. Y.—(118-119)

AMERICAN & EFIRD MILLS, INC.
MOUNT HOLLY, N. C.—
(387, 388, 397, 398)

EXHIBIT: Knitting yarns for all purposes: combed, carded, and Durene mercerized cotton; textralized yarns for Ban-Lon garments; wool, synthetic and blend yarns; garments made from these yarns.
IN ATTENDANCE: W. H. Suttenfield, T. C. Smotherman, R. J. Freese, F. A. Farnell, S. M. Littlejohn, R. F. Jessen.

AMERICAN ENKA CORP.
NEW YORK, N. Y.—(163-164)

AMERICAN LAUNDRY MACHINERY CO.
CINCINNATI, OHIO—(292)

AMERICAN SAFETY TABLE CO., INC.
READING, PA.—(339-40, 351-52)

EXHIBIT: New improved equipment for industrial sewing rooms, including their new totally-enclosed clutch motor drive and their new trimming, turning and pressing collar machine. Also featured will be their electronic needle positioner.
IN ATTENDANCE: David Frankel, Henry King, Justin Baumann, Robert Pettit, Benjamin Greenawald, Malcolm Spinrad.

AMERICAN THREAD COMPANY, INC.
NEW YORK, N. Y.—(403-406)

AMERICAN VISCOSE CORP.
PHILADELPHIA, PA.—(409)

EXHIBIT: Cotron, Avron and Fiber 40 are among the new fabric ideas displayed. They will also emphasize the stress which is being placed on the development of new promotion and marketing themes for Avisco fibers and films. Avisco Integrity Tag display.
IN ATTENDANCE: D. A. Davis, E. L. Marston, J. C. Folsom, J. H. Kemp, S. B. Lippincott, L. A. Welch, W. Hadfield, L. M. Young.

AMERICA'S TEXTILE REPORTER
BOSTON, MASS.—(153, 154)

AMSCO PACKAGING MACHINERY, INC.
LONG ISLAND CITY, N. Y.—(121-123)

EXHIBIT: Equipment for packaging of textiles in Polyethylene, including their new Amscomatic 100 Baling Conveyor Sealer,

Amscomatic 100 Conveyor Sealer of Amsco Packaging Machinery

New AMCO Trimming, Turning and Pressing Machine of Am. Safety Table Co.

their Amscomatic 100 Conveyor Sealer, and their Simplex Model 24-7S Side Weld Bag Making Machine.

IN ATTENDANCE: Edwin Messmer, John Sylvester, Gene Cignoli, Ed Primosch, Steve Watson, Ed Watson, Frank Czifra, John Kelly, George Wiedersheim, Herbert Weber, R. H. Freeman, Ray Zolte.

ATLANTIC RAYON CORP.
NEW YORK, N. Y.—(327, 328, 329)

EXHIBIT: Nylon, rayon and acetate yarns both dyed in the original producer's twist, as well as dyed and thrown in various put-ups; also stretch and Helanca dyed yarn, as well as samples of textralized dyed yarn.

IN ATTENDANCE: Louis Malina, Fred H. Diamond, Fred Malina, Arthur Malina, Jack Gutcheon, Harry Calder, Ben Appelle, Nat Vaiman, Bob Meltzer, Jud Shapiro, Harold Wilcox, Ed Woods, Ray Westland.

ATWATER THROWING CO.
PLYMOUTH, PA.—(389)

EXHIBIT: Textured and stretch filament yarns and packages, including textralized yarn and Ban-Lon fabrics and garments made from these yarns; materials on stretch yarns and Taslan textured yarns, as well as sewing, seaming and looping yarns for the knitting trades.

IN ATTENDANCE: E. J. Schellenberg, E. J. Schellenberg, Jr., R. P. Schellenberg, W. L. Huggins, III, L. C. Clelland, Forrest Sharpe, S. D. Counterman.

BAGPHANE CORP.
FLUSHING, N. Y.—(553, 554)

EXHIBIT: Flexible packaging for the textile industry featuring cellophane and polyethylene bags, envelopes and printed rolls; their new line of multi-color printed box wraps for hosiery distributors; Du Pont's new "K" film for hosiery packageing.

IN ATTENDANCE: Arnold A. Pollard, Donald B. Kaplan, Rudy Gross, Tom Adler.

BANCROFT & SONS CO., JOSEPH
WILMINGTON, DEL.—(155-159)

EXHIBIT: Wide range of fabrics and garments approved to carry the Ban-Lon trademark.

IN ATTENDANCE: J. Gorman Walsh.

BANNER YARN DYEING CORP.
BROOKLYN, N. Y.—(204)

BARBER-COLMAN CO.
ROCKFORD, ILL.—(501)

EXHIBIT: No display. Space will serve to receive friends and customers.

IN ATTENDANCE: H. C. Schleicher, F. D. Taylor, J. C. Ballard, H. G. Hoffman, F. R. Lincoln.

BARFUSS CORP. OF AMERICA
NEW YORK, N. Y.—(372)

BEAVER CLOTH CUTTING MACHINES, INC.
NEW YORK, N.Y.—(425)

BELL MACHINE COMPANY
HIGH POINT, N. C.—(120B, 138)

EUGEN BELLMANN GmbH
HAGEN-HASPE (Westf.) Germany—(180, 181)

EXHIBIT: Their Colorplast machine which cleans, dyes, pre-boards, finishes and dries ladies' stockings, resulting in the automation of hosiery finishing.

IN ATTENDANCE: Curt Kronsbein, Gerry Lebach.

BEMIS BRO. BAG CO.
TERRE HAUTE, INDIANA—(142)

EXHIBIT: Their polyethylene products designed especially for the packaging of knitwear.

BENTLEY KNITTING MACHINERY ORGANIZATION, INC.
PROVIDENCE, R. I.—(357-362)

EXHIBIT: Products of more than 30 types of Bentley knitting machines; among machines in actual operation will be double-cylinder hosiery machines for knitting half-hose and infants' hosiery, and circular-knit machines for making women's seamless hosiery.

IN ATTENDANCE: Members of the Bentley organization from England, Canada, from Providence and Charlotte.

BLUMENTHAL, INC. B.
NEW YORK, N. Y.—(203)

BOGER & CRAWFORD
PHILADELPHIA, PA.—(530-533)

EXHIBIT: Mercerized and synthetic yarns and products made from them.

IN ATTENDANCE: Ernest T. Boger, Ira B. Wattis, William R. Carothers, Harry Segal, Fred Lowenstein, John Carrasco, Roland D. Seeback, Sam C. King, Morris R. Copeland.

BOTANY COTTONS, INC.
GASTONIA, N. C.—(145-146)

BRANT YARNS, INC.
NEW YORK, N. Y.—(140, 141)

EXHIBIT: Slow carded dyed cotton yarns, including "Softee" yarn a specially processed super fine plied dyed cotton yarn; also Fluflon stretch yarns and Saaba texturized yarn.

IN ATTENDANCE: Irving Brant, William Barest, T. P. Roberts, Samuel E. Carr, Mike Votta.

C.I.T. CORP.
NEW YORK, N. Y.—(69, 70)

EXHIBIT: No special display. Executives will be on hand to discuss and explain the instalment financing of machinery and equipment.

IN ATTENDANCE: Douglas C. Brown, Eugene T. Neville, D. V. McCarthy, Harold A. Post.

CANNON MILLS, INC.
NEW YORK, N. Y.—(499, 500, 505, 506)

EXHIBIT: Combed and carded cotton yarns, both natural and dyed, also blended and novelty yarns.

IN ATTENDANCE: H. E. Aken, W. C. Cannon, D. A. Long, W. F. Denning, T. R. Smith, C. V. Albright, J. C. Bartlett, Henry Crumbliss, Frank A. Dusch, Jr., Joseph F. Russell, James W. Turner, Frank E. Byrne, James C. Williams.

CARBERT MFG. CO., INC.
CAMBRIDGE, MASS.—(600)

EXHIBIT: Their Model 1010 Polyethylene Bag Sealing Machine in actual operation.

IN ATTENDANCE: R. W. Saumsiegle, R. L. Hewson.

CARON SPINNING CO.
ROCHELLE, ILL.—(422)

EXHIBIT: Worsted yarns and products made from them; also nylon, Orlon, Dacron, Creslan, Zefran, Darvan and other synthetic yarns with products made from them.

IN ATTENDANCE: John B. Caron, W. H. Stocking, R. J. Zintak, R. J. Caron, A. J. Amatruda, R. B. Judge, A. Cameron III, W. A. Eipper.

CELANESE CORP. OF AMERICA
NEW YORK, N. Y.—(213-218)

EXHIBIT: The exhibit will point to important new developments in knitted fabrics of Celanese contemporary fibers, both tricot and circular knit, with particular emphasis on new blends of Arnel and Orlon, Arnel and cotton, Celaperm and Helanca. All categories of underwear, outerwear and swimwear will be shown. In addition to mannequin displays of garments, an informal fashion show will be presented throughout the week at frequent intervals.

IN ATTENDANCE: William O'Neill, Harry Fritz, Hamilton Macauley.

CHANDLER MACHINE CO.
AYER, MASS.—(542)

EXHIBIT: Sewing machines, button sewers, pleating machines and swatch cutters.

IN ATTENDANCE: Richard Maxant, Arthur Maxant, Richard Shields.

CHEMSPUN YARNS, LTD.
NEW YORK, N. Y.—(261-262)

EXHIBIT: Novelty twisted yarns, bouclé, spun nylon, spun Orlon, tow dyed Orlon, etc.

IN ATTENDANCE: Mac Bier, Richard Virgil, Mark Leopold, Martin D. Bier, Monroe Seligman, John Webster, William J. Carnahan, Rufus Dalton.

CHEMSTRAND CORP.
NEW YORK, N. Y.—(66-68)

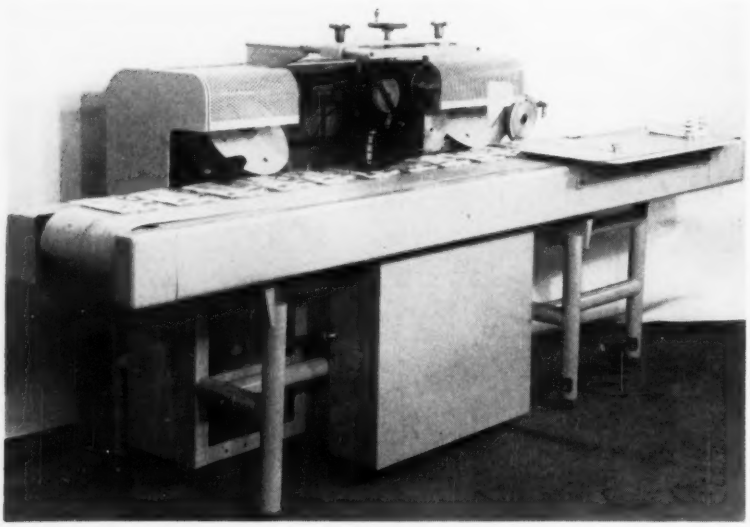
EXHIBIT: Technological progress will be exemplified by their new 15 denier seamless hosiery package; exciting theme promotions on color and fashion will stress Chemstrand's contribution to hosiery and lingerie merchandising; new developments in texturized nylon yarn and latest developments in 100% Acrilan jersey, knitted fleeces and other novel fabrications.

IN ATTENDANCE: W. G. Luttge, E. L. Lauber, B. F. Bertland, M. R. Dalton, C. W. Gaylor, M. H. Morse, H. B. Ackerman, C. G. Flynn, J. A. Lopez, R. H. Hale, H. Cramer, T. V. Shumeyko.

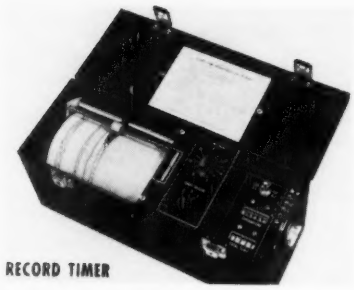
CLINTON INDUSTRIES, INC.
HACKENSACK, N. J.—(451, 452)

EXHIBIT: Various attachments to industrial sewing machines, as Cyclo-Matic, Trim-O-Matic, Trim-O-Way, Chain Cutter, Flip Stacker, Automatic Foot Lifter, and Record Timer.

IN ATTENDANCE: Saul Cohen, Harry Klein, Clyde Adams.



Carbert Manufacturing Co.'s
Model 1010 Poly Bag Sealer



RECORD TIMER

Clinton Industries' Record Timer

COCKER MACHINE & FOUNDRY CO.
GASTONIA, N. C.—(88, 89, 94, 95)

EXHIBIT: Devices comprising the Volumet Hosiery Control System, consisting of Hosiery Testing Machine, Full-Fashioned Hosiery Testing Machine, portable unit for testing Seamless Hosiery, and the Combination Volumet for Full-Fashioned and Seamless Hosiery.

IN ATTENDANCE: Frank Suggs, John Bodansky, Hoyt Cunningham, Don Shepherd, Jimmy Etheredge, Orville Davis, W. Spencer Clark, Joseph C. Cobert, Harry Kiser.

COLLEGE CHEMICAL CO.
MEDFORD, MASS.—(456)

EXHIBIT: Their Clena-form, a non-inflammable cleaning compound for removing residue build-up from boarder and preboarder forms in the finishing of nylon stockings.

IN ATTENDANCE: B. Zarakov, Mrs. B. Zarakov.

COMER-AVONDALE MILLS, INC.
CHARLOTTE, N. C.—(303)

EXHIBIT: Avondale yarn knitted to form the distinctive red and white stripe effect on nylon forming highlight of their booth, which will serve to receive visitors.

IN ATTENDANCE: J. Craig Smith, Donald Comer, Jr., W. R. Austin, Archie Clark, W. G. Haynes, P. R. Branton, G. W. Bailey, H. S. Morrow, L. B. Allen, R. E. Fulton, E. J. Ballou, B. C. Weber, J. E. Bush, Winston Hardegree, G. A. Clark, Charles Crowther, I. C. Schumacher.

COTTON YARNS, INC.
NEW YORK, N. Y.—(145, 146)

EXHIBIT: Combed, mercerized, carded, dyed and bleached yarns of all counts for weaving and knitting and various put-ups; also sewing thread yarns and finished units; blend yarns.

IN ATTENDANCE: C. A. Ross, Robert J. Gurney, Henry M. Kamins, Allan Kushner, Mack Reibel, Allen H. May.

COURTAULDS (Ala.) INC.
NEW YORK, N. Y.—(443, 448)

EXHIBIT: Knit garments of Coloray and Corval, their new cross-linked cellulosic fiber.

IN ATTENDANCE: Royston Dunford, Homer M. Carter, J. Allen Plant, Wm. H. Ward, Kaye P. Styron.

CRAWFORD COMPANY, INC., H. E.
CRAWFORD MFG. CO., INC.
KERNERSVILLE, N. C.—(85-87, 96-98)

CROSS COTTON MILLS CO.
MARION, N. C.—(543, 544)

EXHIBIT: No Special display.

IN ATTENDANCE: Eugene Cross, Jr., Oliver R. Cross, Louis E. Williams, Eugene Cross, III.

CUMMINGS LANDAU LAUNDRY MACHINERY CO., INC.
BROOKLYN, N. Y.—(107, 108)

EXHIBIT: Various types of laundry equipment, such as Washer, Extractor, and steam heated drying Tumbler.

IN ATTENDANCE: Eugene Cummings, Dave Green.

CUTTING ROOM APPLIANCES CORP.
NEW YORK, N. Y.—(453-4, 485-6)

EXHIBIT: Cloth laying machines for woven and tubular knit fabrics; metal sectional cutting tables; three models of thread trimming machines.

IN ATTENDANCE: D. Grossberg, B. Gottschalk, B. Korn, John E. Fox, A. Maimin, J. Pransky.

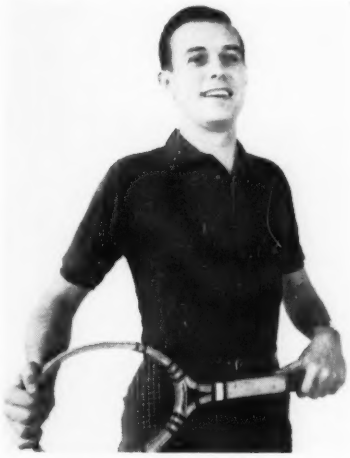
DAILY NEWS RECORD
NEW YORK, N. Y.—(139, 139A)

DAVISON PUBLISHING CO.
RIDGEWOOD, N. J.—(61, 62)

DEERING MILLIKEN RESEARCH CORP.
SPARTANBURG, S. C.—(425, 426)

EXHIBIT: Items made of their new Agilon predeveloped yarn, such as women's sweaters, leotards, ski pants, girdles, bathing suits, dresses and others; also hosiery, upholstery fabrics and carpets.

IN ATTENDANCE: Russell Newton, Norman Armitage, Ken Lowry, Raymond Owings, Harold Johnson, Cyril Evans, George Cocoros, James Sawyer, Clement Keys, William Moss, Fred Langdon.



Courtaulds, Coloray/Orlon
Knitted Sports Shirt

DENNISON MANUFACTURING CO.
FRAMINGHAM, MASS.—(539)

EXHIBIT: Print-Punch Marking Machines, Dial-Set Imprinter, and Pinning Machines.

IN ATTENDANCE: F. T. Gerould, M. F. Clarke, K. B. Reade.

DIXIE MERCERIZING CO.
CHATTANOOGA, TENN.—(527-529, 534-536)

EXHIBIT: Various types of their yarns, also fabrics, garments and products made of Dixie yarns. They will also feature a variety of the latest European fabrics and products for men, women and children, selected by their stylist and advertising manager, Miss Mabel Nolan, on her European tour.

IN ATTENDANCE: J. Burton Frierson, Jr., Arthur K. Johnson, C. Ralph Ewing, Peter D. Morrow, Mabel Nolan, George S. Bryan, J. Blackwood Cameron, Alexander Cameron III, Preston H. Dalglish, William A. Eipper, Jr., Wilbur D. Evans, Fred W. Frank, W. C. Henderson, Leo K. Hill, E. R. Kimball, Walter W. Logan, Marcus M. Munsill, George M. Porges, Thomas J. Tighe, George W. Veness, Robert L. Voigt.

DOW CHEMICAL CO.
WILLIAMSBURG, VA.—(471-473)

EXHIBIT: The Textile Fibers Department will show knitwear applications of their Zefran acrylic alloy fiber and Lurex metallic yarn.

IN ATTENDANCE: Leon Seidel, W. H. Oliver.

DRAPER CORP.
HOPEDALE, MASS.—(250)
See Wildman Jacquard Co.

DUBIED MACHINERY CO.
LONG ISLAND CITY, N. Y.—(272-274)

EXHIBIT: Two types of Flat Knitting Machines, DRBA and DRC, as well as knitted samples.

IN ATTENDANCE: John G. Sandri, Rudolf Singer, Ernest Hafner, E. G. Hooton.

DU PONT DE NEMOURS & CO., INC., E. I.
WILMINGTON, DEL.—(109-113, 124-128)

EASTERN YARN MILLS, INC.
NEW YORK, N. Y.—(261, 262)

EXHIBIT: See Chemspun Yarns Ltd.

EBERLY, JOHN A., INC.
READING, PA.—(537, 538)

EXHIBIT: "Arrow" latch needles, sinkers, jacks, sliders, and precision stampings; also specialty items for the maintenance of mill equipment.

IN ATTENDANCE: V. L. Eshelman, G. MacFadyen, A. L. Eshelman.

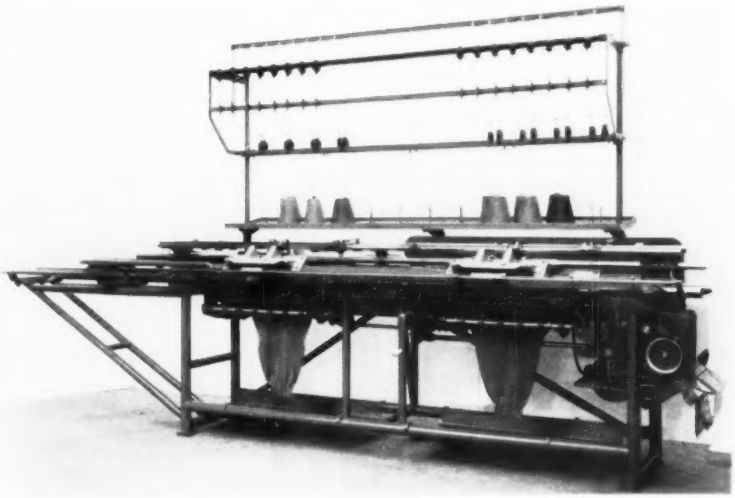
EMSIG MANUFACTURING CO.
NEW YORK, N. Y.—(383, 384)

EXHIBIT: Shank type buttons and sew-thru buttons particularly suited to knitwear; also newest model of Troll Automatic Feeder.

IN ATTENDANCE: Larry Jacobs, George Rice, Dave Schweber, Harry Zeide, Daniel Kramish, Carl Butler, Stanley Slatky, Leon Simon, Martin Sucher, Wally Weiss, Lou Topal, Mort Roseman, Mr. Gruskin.

ENGINEERED PLASTICS, INC.
GIBSONVILLE, N. C.—(63)

EXHIBIT: Bobbins, spools, tubes, cops, plastic coatings, and plastic materials.



Dubied Type DRBA
Flat Knitting Machine

Errich International's
"Speedy Bag Packager"

In Attendance: D. M. Davidson, Jr., C. H. Phillips, J. Elmo Jones.

ERRICH INTERNATIONAL CORP.
NEW YORK, N. Y.—(552)

Exhibit: The three latest models of their Speedy Bag Packager will be shown and demonstrated.
In Attendance: Manuel R. Ruderman, Herman Bitterman, Robert Shafran, Joseph Cappell.

ETHERINGTON BROTHERS, INC.
PHILADELPHIA, PA.—(502)

Exhibit: No special display.
In Attendance: Burton H. Etherington, Jr., Frederick H. Etherington, J. Patrick Daly, III, Henry W. Swift, Robert T. Davis, Jr., John R. Crawford.

EWING-THOMAS CORP.
CHESTER, PA.—(114-115)

Exhibit: Mercerized yarn, natural, bleached and dyed, specially designed for knitting and weaving purposes.
In Attendance: James L. Rankin, Jesse W. Jester, George W. Fiss, Richard E. Rankin, David Thomas, Jacob F. Meschter, George E. White.

FABRIONICS CORP.
HUNTINGTON, L. I.—(11)

FANCOURT CO., W. F.
PHILADELPHIA, PA.—(515, 516)

FIDELITY MACHINE CO., INC.
PHILADELPHIA, PA.—(243-248)

Exhibit: Their complete line of Dual Feed 400 and 474 needle electronically controlled ladies' seamfree hosiery machines; latest model ATR Automatic True Rib Hosiery machines; complete line of yarn Tension Meters; latest model AR-6600 Yarn Tensioner and Compensator.
In Attendance: Lawrence Katz, Roy D. Faigenbaum, Robert Peel, Peter Mahler, Thomas Thore, Leo Hill, Thomas Tighe, Crockett S. Brannock, Hans Koehler, William Hunton.

FIRSCHING & SON, INC., J. A.
UTICA, N. Y.—(282, 283)

FLETCHER WORKS
PHILADELPHIA, PA.—(190-192)

FOSTER MACHINE CO.
WESTFIELD, MASS.—(82-84, 99-101A)

Exhibit: In operation three different models of synthetic yarn take-up machines, covering the whole range of wet, dry and melt spun spinning; also their adaptable Model 102 Backwinding equipment.

In Attendance: W. C. Chisholm, E. C. Connor, P. H. Farmer, E. P. Dodge, H. E. Swift, C. A. Faunce, E. H. Ely, G. W. Mallory, J. A. Moore, R. B. Kendall, F. F. Stange.

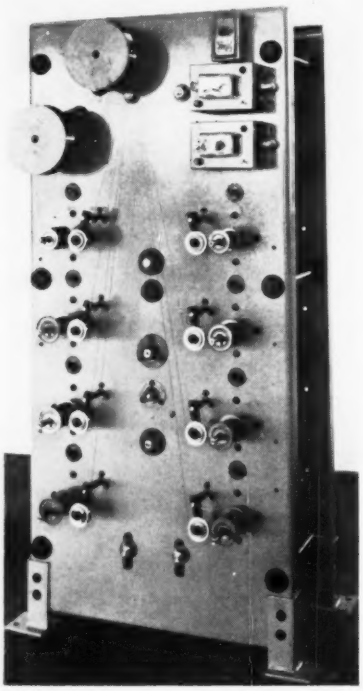
FRANKL ASSOCIATES, ERNEST L.
NEW YORK, N. Y.—(71-72)
See Morat GmbH, Franz

FRANKLIN PROCESS CO.
PHILADELPHIA, PA.—(444, 445)

Exhibit: Packag-dyed yarn for the knitting industry, such as cotton, Orlon, Ban-Lon, textralized nylon, and blends.
In Attendance: Walter F. Wolfe, R. B. Lusignea, F. Navas, C. W. Dawson, B. S. Phetteplace, R. F. Strahley.

GALLER, INC., JOSEPH
NEW YORK, N. Y.—(610)

GARMENT FINISHING EQUIPMENT CORP.
CAMBRIDGE, MASS.—(132-134)



Foster Machine Co.'s Constant Tension 16 End Spooler

(below) Foster's Model 403 Take-Up Winder

GINSBERG MACHINE CO., INC.
NEW YORK, N. Y.—(266-269)

Exhibit: Various types of their Trim-Master equipment, also their Tape-Master, Sciss-O-Matic, Angle-Strip-Cutter, and Util-I-Tee Spreader.
In Attendance: Si Margolis, Howard Ginsberg, Harold Stout, Charles Gerstein, Mrs. J. Schorpp, Bill Bleicher.

GLOBE DYE WORKS CO.
PHILADELPHIA, PA.—(377, 378)

Exhibit: Dyed yarns for the knitting trade.
In Attendance: H. T. Greenwood, Thomas S. Greenwood, Fred V. Traut, William B. Taylor, Richard W. Foltz.

B. F. GOODRICH CHEMICAL CO.
CLEVELAND, OHIO—(37A)

Exhibit: Varied applications of Darvan dinitrile fiber in the knitting industry.
In Attendance: L. R. Reuter, H. E. Greene, J. M. Bloomfield, A. L. Ilg, A. E. O'Heir.

GORDON INDUSTRIES
WINSTON-SALEM, N. C.—(373)

HARDING, INC., H. C.
PHILADELPHIA, PA.—(57, 58)

Exhibit: Special needle oils, solvents and penetrants, nylon oils, needle cleaners and other special lubricants for use in the knitting industry. First showing of their new products Stat-Ease, Stat-O-Lene and Rayol.
In Attendance: George J. Reihl, Michael M. Wolf, Edward Beier.

HARRIET-HENDERSON COTTON MILLS
HENDERSON, N. C.—(129, 130, 131)

HAYES INDUSTRIES, INC.
JACKSON, MICH.—(611)

Exhibit: Light weight tricot and raschel beams of aluminum in sizes from 13¾" to the new 30".
In Attendance: R. D. Richards, W. D. Sharp, J. E. Prins, J. P. Laird.

HAYSSEN MANUFACTURING CO.
SHEBOYGAN, WIS.—(555, 556)

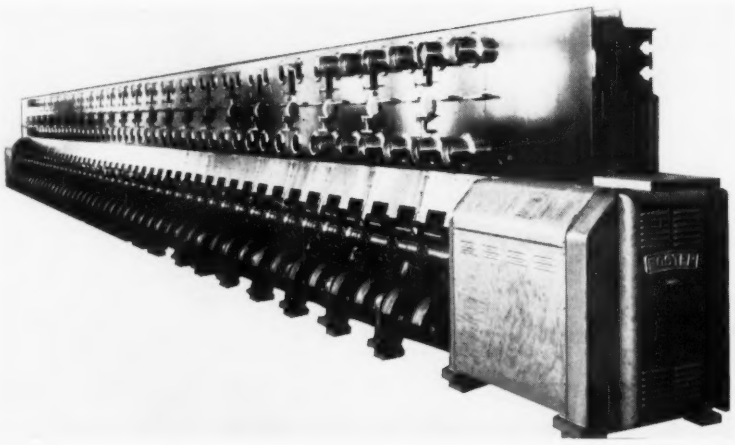
Exhibit: All-new speed polyethylene packaging machine for textiles and knit goods.
In Attendance: W. A. Hayssen, J. C. Johnston, Fred Koehn, A. F. Perry, R. P. Wilson, J. O. Willis, Richard Wimmer, Tom Drake.

HEANY INDUSTRIAL CERAMIC CORP.
NEW HAVEN, CONN.—(43)

Exhibit: Heanium textile guides and tensioning devices.
In Attendance: A. O. Pieper and R. L. Carroll.

HEBERLEIN PATENT CORP.
NEW YORK, N. Y.—(182-183)

Exhibit: Assorted Helanca products and fashions.
In Attendance: Martin A. Pokrass, Max Held, Steve Weller, Richard Koendorf, Joseph Murphy, John Lochis, Samuel G. Pitney, Peggy Hollings.



HELIOT ETS., MAURICE
CHARLOTTE, N. C.—(559-564)

HEMPHILL COMPANY
NORRISTOWN, PA.—(250)
See Wildman Jacquard Co.

HENRICI LAUNDRY MACHINERY CO.
MATTAPAN, MASS.—(41)

HERR MANUFACTURING CO., INC.
BUFFALO, N. Y.—(38-39)

EXHIBIT: Their "M" Type conical rings; special flyers for producing Helanca and other high stretch yarns at maximum spindle speeds.
IN ATTENDANCE: Hyatt B. Atwood, Robert M. Leach, William Woodard, James McLean, William K. Anderson, Jr.

HIGHLAND COTTON MILLS, INC.
HIGH POINT, N. C.—(395-396)

HOFMANN & CO. ALFRED
NEW YORK, N. Y.—(341, 342, 349, 350)

HOFMANN NEEDLE WORKS, INC., ALFRED
UNION CITY, N. J.—(363, 364, 356, 355)

EXHIBIT: No special display. Reception booth.
IN ATTENDANCE: Hanns L. Wirth, George C. Graves, Bruce Lauderbach, Charles B. Paulus, Kenneth R. Lingley, George Veness, Hans J. Wirth.

HOHENBERG CO., INC.
NEW YORK, N. Y.—(400)

HOSIERY MACHINE CORP. OF AMERICA
NEW YORK, N. Y.—(461-462)

EXHIBIT: Together with National Industrial Machinery Corp. and Rubenstein Brothers Co. Booton 400 Needle 3¾" Twin-Feed Ladies Seamless Knitting Machine; Mauser Industrial Sewing Machine; and Svegea Band Cutting Machine.
IN ATTENDANCE: J. N. Bogoff, J. B. Becker.

HOSIERY & UNDERWEAR REVIEW
NEW YORK, N. Y.—(51-52)

HOSIERY INDUSTRY WEEKLY
NEW YORK N. Y.—(118-119)

HOWES PUBLISHING CO., INC.
NEW YORK, N. Y.—(118-119)

HUDSON AUTOMATIC MACHINE & TOOL CO.
UNION CITY, N. J.—(18)

INDIAN ORCHARD FINISHING CO., INC.
INDIAN ORCHARD, MASS.—(116-117)

EXHIBIT: Display of finishes and dyeing of circular knitted fabrics; color slides of mill operations in both yarn and piece dyed goods.
IN ATTENDANCE: Larry Wess, Abe Young.

INDUSTRIAL DRYER CORP.
STAMFORD, CONN.—(151-152)

EXHIBIT: "H-W" Conditioner, arranged to automatically pre-heat, condition, dry, or exhaust.
IN ATTENDANCE: P. H. Friend, J. R. Tutt, R. G. Leininger, F. W. Caesar.

INTERNATIONAL TEXTILE MACHINE CO.
CHARLOTTE, N. C.—(559-564)

EXHIBIT: "Autoboard", a new automatic sock boarding machine; also the following equipment manufactured by Specialty Manufacturers & Sales Co.: Automatic hosiery transfer machine, automatic inserting and inspection machine, automatic ridering machine for attaching hosiery riders, and "Inspectomatic", new compressed air operated automatic hosiery inspection machine.

IVES CO., INC., LOYAL T.
NEW BRUNSWICK, N. J.—(344-345)

EXHIBIT: Spring beard knitting machine needles, sinkers, jacks, sliders, points and other sheet metal knitting machine parts.
IN ATTENDANCE: Theodore Whitlock, Sr., Theodore Whitlock, Jr., as well as other personnel for technical consultation.

J & H LABEL PROCESSING CORP.
MAYWOOD, N. J.—(160)

EXHIBIT: Label and narrow fabric cutting and folding machinery; new method and latest equipment for attaching labels, emblems, and garment components; and samples of such pre-processed components.
IN ATTENDANCE: Clifford Jordan, Russell C. Jordan, William Neimeyer.

JOHNSTON MILLS CO.
CHARLOTTE, N. C.—(540, 541)

EXHIBIT: Samples of single and ply combed and carded yarn on cones taken from their production in the natural, bleached, and dyed. Also sample cones of their Durene yarn as produced by Spinners Processing Co.
IN ATTENDANCE: D. R. Johnston, D. R. Jonas, E. E. Jones, Jr., R. M. Bechtel, R. N. Belk, H. M. Byrne, W. J. Crummer, Philip Gesoff, A. R. Newcombe, Jr., E. M. Peacock, W. B. Phelps, Jr., W. J. Yates.

JORDAN MILLS, INC.
JORDAN SPINNING CO.
COLUMBUS, GA.—(120, 120A)

JUDELSON, INC., OSCAR I.
NEW YORK, N. Y.—(336)

KAPLAN COMPANY, MORRIS
Name changed to Philip Knitwear Machinery Corp. See there.

KAUMAGRAPH CO.
WILMINGTON, DEL.—(549-551)

KEYSTONE DYEING CO., INC.
PHILADELPHIA, PA.—(504)

KIDDE TEXTILE MACHINERY CORP.
BLOOMFIELD, N. J.—(487-488)

EXHIBIT: Reception booth only. A full line of Kidde equipment will be on display at Bloomfield, N. J. and transportation will be provided for visitors.
IN ATTENDANCE: W. J. Behr, Jr., H. W. Ruddick, J. H. Fleming, R. Lanthier, R. Giordano, E. L. Herbert.

KIMBALL CO., A.
BROOKLYN, N. Y.—(399)

KLAUDER WELDON GILES MACHINE CO.
PHILADELPHIA, PA.—(73)

KLEIN & COMPANY, JOHN
NEW YORK, N. Y.—(343, 348)

KLUMPP CO., JOSEPH
PHILADELPHIA, PA.—(503)

EXHIBIT: Yarns, including carded, combed Durene cotton and specialty yarns.
IN ATTENDANCE: J. J. Klumpp, G. L. Vonder Lindt, Wallace Gill, Jr., Carl H. Beitel, Erwin H. Aptaker.

KNITTER, THE
CHARLOTTE, N. C.—(514)

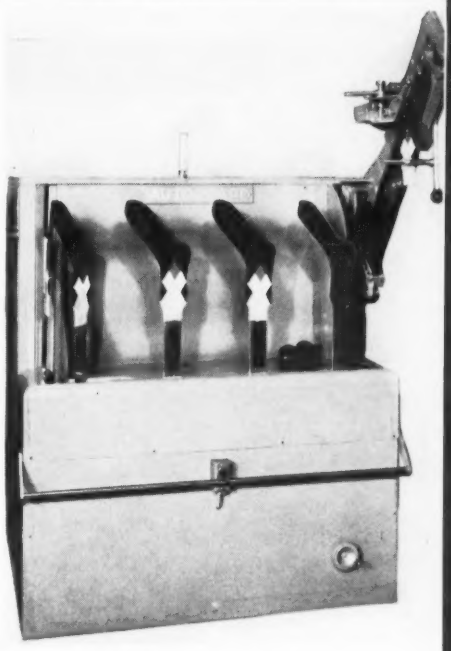
KNITTING INDUSTRY WEEKLY
NEW YORK, N. Y.—(118-119)

KNITTING MACHINE & SUPPLY CO.
UNION CITY, N. J.—(289-291)

EXHIBIT: The following H. Stoll & Co. flat knitting machines: Model "LIUM" Links/Links Jacquard-Transfer Machine, Model "AJUM" Jacquard Transfer Machine, and Model "KAMO/j" Jacquard Border Machine.
IN ATTENDANCE: Ernest Marthaler, Allen D. Van Anda, Heinz Stoll, Lothar Nonnenmacher, Heinz Fleck.

KRUSE & SLATTERY, INC.
CAMDEN, N. J.—(42)

EXHIBIT: F. F. sinker heads and parts thereof.
IN ATTENDANCE: J. Loeb, J. German, J. J. Slattery, Jack Slattery.



International Textile Machine Co.'s Autoboard Hosiery Boarding Machine

LACONIA COOPER SALES CORP.
LACONIA, N. H.—(349, 350, 341, 342)

EXHIBIT: Reception booth only.
IN ATTENDANCE: Hanns L. Wirth, Howard Bacon, George C. Graves, Bruce Lauderbach, Charles B. Paulus, Kenneth R. Lingley, George Veness, Hans J. Wirth.

LAMB KNITTING MACHINE CORP.
CHICOPEE FALLS, MASS.—(368)

EXHIBIT: Model VS100 double-head knitting machine for knitting vertical stripe trimming, also parts for converting this machine from two to three colors; samples of the various types of knitted material made on their equipment.
IN ATTENDANCE: John Giokas, John Heitman.

LA MODE HOSIERY CORP.
NEW YORK, N. Y.—(343-348)

LARZELERE, DAYTON
PHILADELPHIA, PA.—(54-56)

LASSITER CORPORATION
NEW YORK, N. Y.—(367, 372-376)

LATTA, CURRIER CO., INC.
NEW YORK, N. Y.—(74, 74A)

LAUREL SOAP MANUFACTURING CO., INC.
PHILADELPHIA, PA.—(547, 548)

EXHIBIT: Their line of soaps, oils and finishes for the knitting trade, also specialties, such as lubricating and conditioning emulsions and winder trough solutions, hosiery boil-off compounds, softeners, flame-retardants, package dyeing assistants and finishes.
IN ATTENDANCE: Clarence E. Bertolet, William H. Bertolet, Jr., William H. Bertolet, 3rd, A. Henry Gaede, Fowler Jackson, B. N. Peterson, J. Paul McGinty, Albert H. Rant, Joseph J. Murphy.

LEATEX CHEMICAL CO.
PHILADELPHIA, PA.—(170, 177)

LEON-FERENBACH, INC.
NEW YORK, N. Y.—(381)

EXHIBIT: Nylon, silk and rayon yarns, including Leferon, Dyna-Loft, Helanca, Venturia and bulked yarns; products made from these yarns; modified continuous filament yarns for the sweater, outerwear and underwear trades.
IN ATTENDANCE: Carl Ferenbach, W. T. Swoyer, Jr., R. S. Ferenbach, H. D. Godfrey, R. W. Boyd, C. W. Wolcott.

LIBERTY THROWING CO., INC.
KINGSTON, PA.—(334)

EXHIBIT: Stabilized Jumbo package knotless sewing threads; a new graphite resistant size or finish for the lace trade; low twist Dacron yarns made by a new method which eliminates downtwisting.
IN ATTENDANCE: Charles M. Epstein, John D. Sicher, George M. Poillon, David E. Smith.

LIDZ BROTHERS, INC.
NEW YORK, N. Y.—(423)

EXHIBIT: Buttons and hopper feed for shank button sewing machine.
IN ATTENDANCE: Milton Boriss, Edward Lidz.

LIEBERKNECHT, INC., KARL
READING, PA.—(391-394)

EXHIBIT: No machinery display. Interested parties may see their latest hosiery and carpet knitting machines in operation at near-by Pennsylvania locations to which transportation will be arranged.
IN ATTENDANCE: Rudy Thierfelder, George Groh, Eugene Zesch, C. A. Friedmann.

LINDLY & CO., INC.
MINEOLA, N. Y.—(59, 60, 60A)

EXHIBIT: Their Automatic Yarn Inspecting equipment, Tricot Photo Scanner, End Break Detector, and various models of their Electrotense. Also their new Lance Static Eliminator.
IN ATTENDANCE: H. C. Lindemann, D. J. Mindheim, V. Mateyka, C. P. Elgin, Arthur T. Hatton, Chan Robbins, J. G. Swinney, F. C. Cureton, J. Hopkins.

LINGERIE MERCHANDISING
NEW YORK, N. Y.—(53)

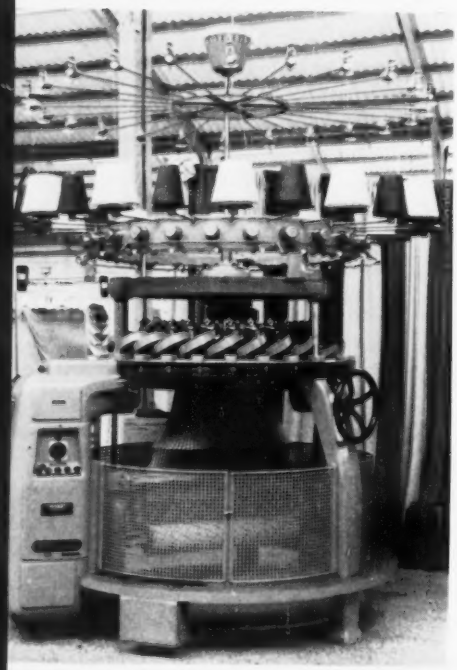
MALINA CO.
NEW YORK, N. Y.—(327-329)

EXHIBIT: Nylon, rayon and acetate yarns, natural, dyed and thrown, in all types of put-ups, all types of dyeing and all types of throwing; stretch and Helanca type yarns, natural and dyed; metallic yarns.
IN ATTENDANCE: Louis Malina, Fred H. Diamond, Fred Malina, Arthur Malina, Jack Gutcheon, Sam Eisenberg, Harry Calder, Ben Appelle, Nat Vaiman, Bob Meltzer, Jud Shapiro, Harold Wilcox, Ed Woods, Roy Westland.

MARKEM MACHINE CO.
KEENE, N. H.—(295-296)

EXHIBIT: Their Model 126C Machine for printing complete labels from blank roll stock or overprint on woven labels; Model 45H for printing identification on bags, envelopes or boxes.
IN ATTENDANCE: Thomas Huggins, Leon Graves, Charles H. Cheeseman, Ferd Suehle, Michael Casey, Harris Clark.

MARLEY DISTRIBUTING CO., INC., STANFORD
NEW YORK, N. Y.—(164A)



Franz Morat's Circular Jacquard Knitting Machine

MARUM KNITTING MILLS, INC.
LAWRENCE, MASS.—(180-181)

MARVEL SPECIALTY CO.
PADUCAH, KY.—(277, 279)

EXHIBIT: Their Mending machine with iron attachment; Marvel-Meter; Marvel-StaX, a machine which inspects, turns and stacks all types of half hose; and their Ace AlSiMag Throat Plate.
IN ATTENDANCE: Gus T. Smith, Lewis T. Ballard, Hubert Hurley, Carl McAnally.

MAYER TEXTILE MACHINE CORP.
CLIFTON, N. J.—(186-190)

EXHIBIT: A double-needle bar Raschel machine for the manufacture of thermal cloth; a 24-bar Raschel knitter for intricate lace patterns; and a 2-bar Tricot knitter.
IN ATTENDANCE: Helmut Nittmann, Nat Brody.

McCREARY MACHINE WORKS, INC.
COHOES, N. Y.—(148)

MERROW MACHINE CO.
HARTFORD, CONN.—(264, 265, 270, 271)

MEYERS & CO., CLARENCE L.
PHILADELPHIA, PA.—(305-308)

MILTON MACHINE WORKS, INC.
MILTON, PA.—(335)

EXHIBIT: Aluminum alloy tricot and Raschel beams equipped with $13^{3}/_{4}$" and 21" diameter heads, also, for the first time, a 30" dia. forged head tricot beam.
IN ATTENDANCE: A. J. McMurtrie, J. Stanley Billig, C. J. Anchor, H. I. Shultz, Jr.

MODERN TEXTILES MAGAZINE
NEW YORK, N. Y.—(78, 79)

MOHER & CO.
PHILADELPHIA, PA.—(293, 294)

EXHIBIT: Yarns spun by the various mills they represent, covering woolen, worsted, synthetic and blended yarns, together with sweaters, hosiery, outerwear and cloth made from these yarns.
IN ATTENDANCE: Arthur J. Moher, C. J. McAlaine, E. L. Merritt, Jr., William C. Schmidt, George Richardson, Arthur K. Moher, H. Meade Freeman, Jr., Ken MacKay, Robert Mathieu.

MONARCH MARKING SYSTEM CO.
DAYTON, OHIO—(483)

MORAT G.M.B.H., FRANZ
STUTTGART/VAIHINGEN, GERMANY
Represented by Ernest L. Frankl Associates, New York, N. Y.—(71-72)

EXHIBIT: The Morat Circular Jacquard Knitting machine with many new automatic features and great variety of possible patterns in operation on wool, cotton, synthetic and textured yarns; also large selection of fabrics made on this machine.
IN ATTENDANCE: Mrs. F. Schark, Ernest L. Frankl, Gunther Frankl, E. Haubold.

MULLER & CO., L.P.
PHILADELPHIA, PA.—(466, 467)

EXHIBIT: No display. Reception booth only.
IN ATTENDANCE: H. D. Muller, H. G. Harper, J. M. Matlack, J. T. Hawthorne, F. H. Ward, T. H. Nicholson, T. C. Brown, Tom Dove, E. W. Dunham, R. A. Eldridge, W. C. Muller, H. R. Peck, E. O. Penington, H. R. Penington, H. E. Protzmann, A. B. Reid, C. F. Wilmeth.

MUTUAL PAPER CO., INC.
BROOKLYN, N. Y.—(613)

NARROW FABRIC CO.
READING, PA.—(401, 402, 407, 408)

NATIONAL INDUSTRIAL MACHINERY CORP.
NEW YORK, N. Y.—(461-462)
See Hosiery Machine Corp. of America

NATIONAL VULCANIZED FIBRE CO.
WILMINGTON, DEL.—(601, 602)

EXHIBIT: Lestershire spools and bobbins including the new Lock-eze Jack Spool; Kennett materials handling equipment, fiber boxes, trays and floor trucks.
IN ATTENDANCE: E. B. Burnely, J. C. Davis, A. B. Matthews, R. S. Davis, G. M. Hutchinson, L. W. Phelps, G. M. Lang.

NEW YORK PRESSING MACHINERY CORP.
NEW YORK, N. Y.—(423, 424)

ORDNANCE GAUGE CO.
PHILADELPHIA, PA.—(199-201)

PANAMERICAN PUBLISHING CO., INC.
NEW YORK, N. Y.—(468-469)

PARAMOUNT TEXTILE MACHINERY CO.
CHICAGO, ILL.—(313, 314, 323-326)

EXHIBIT: Model 50 Retort—Ladies' hosiery finishing machine; Model 16 Paramark transfer machine for half hose and anklets; hosiery drying and finishing forms; attachment for the Getaz toe closure.
IN ATTENDANCE: William Pope, John Fenley, W. H. Albertson, L. J. Albertson, O. A. Siegel, L. D. Ross, Ralph Storrs, Wilfred Pike, Margaret Gustafson.

PELLON CORPORATION
NEW YORK, N. Y.—(337)

PERNICK CO., INC., JOSEPH
MASPETH, N. Y.—(338)

EXHIBIT: Machinery for the underwear and outerwear trade, including Gumming & Slitting machine, Calendar, Measuring and Examining machine, Aero-Dyne tubular cloth dryer, and others.
IN ATTENDANCE: Louis Pernick, David Pernick, David Haft, Mark Pernick.

PHARR WORSTED MILLS, INC. and PHARR YARNS, INC.
PHILADELPHIA, PA.—(54-56)

PHILADELPHIA METAL DRYING FORM, INC.
PHILADELPHIA, PA.—(37)

EXHIBIT: Steam and electric drying forms, tables and accessories for such forms, sizing boards, and transfer machine.
IN ATTENDANCE: Barton B. Johnson, Arthur H. Johnson, Thomas P. Flanagan.

PHILIP KNITWEAR MACHINERY CORP.
BROOKLYN, N. Y.—(431-440)

EXHIBIT: Two models of their Multi-Feed Interlock Sweater Machine, their Jacquard Rib Trimming and Jacquard Yard Goods Machine, and their full automatic Multi-Head F F Sweater Machine.
IN ATTENDANCE: Morris Kaplan, Philip Belaief.

PIEDMONT PROCESSING CO.
BELMONT, N. C.—(385, 386)

EXHIBIT: Yarn-dyed cotton fabrics.
IN ATTENDANCE: J. H. Lineberger, J. H. Martin, Jr., F. E. Stuart, H. J. Jordan, Jr., C. L. Blomgren, Terry Russo.

PLATNICK, JOSEPH
VALLEY STREAM, L. I., N. Y.—(614)

PRECISION PAPERS, INC.
BROOKLYN, N. Y.—(613)

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA, PA.—(557, 558, 565, 566)

EXHIBIT: Complete equipment for processing tubular knit goods, including bleaching, extracting and impregnating, drying; also equipment for producing "Redmanized" fabrics; equipment for tricot incl. the Dalglish tenter, pin frame and overfeed; and their new Tray Dryer for ladies' all-nylon hosiery.
IN ATTENDANCE: William H. Poole, William M. Harper, Parke L. Schaffer.

PUERTO RICO, Commonwealth of
NEW YORK, N. Y—(207-210)

QUEENS MACHINE CORP.
BROOKLYN, N. Y.—(80-81)

EXHIBIT: Two models of their SFS Border Machines; their Model BJ Jacquard; a Model SM Circular String Border Machine; and a 2½ cut Model B machine for bulky jumbo knit trimming and garment sections.
IN ATTENDANCE: Michael Zimic, Jerry Miskovsky, W. Corby, J. Meyer.

REECE CORP.
WALTHAM, MASS.—(427, 428)

REINER, INC., ROBERT
WEEHAWKEN, N. J.—(369-371)

EXHIBIT: A working model of a Famatex tenter frame and their new 170" Excentra tricot machine.
IN ATTENDANCE: John A. Vollmann, K. T. Marx, Walter Horn, H. D. Scheube, H. C. Feustel.

RELIABLE MACHINE WORKS, INC.
BROOKLYN, N. Y.—(330)

RELIANCE ELECTRIC & ENGINEERING CO.
CLEVELAND, OHIO—(263)

RHODIA, INC.
NEW YORK, N. Y.—(509)

EXHIBIT: Rhovyl fibers 55 and T and products made from such yarns, especially wool and Rhovyl yarns and fabrics for the outerwear trade; also some suede fabrics of Rhovyl and nylon, rayon, etc.; some fur-pile fabrics, underwear fabrics, also shown will be the range of dope-dyed colors Rhovyl is available in.

RICHMOND OIL, SOAP & CHEMICAL CO., INC.
PHILADELPHIA, PA.—(202)

EXHIBIT: Various types of yarn, threads, piece goods and finished fabrics showing the application of their chemical specialty products, such as coning and yarn lubricants, spinning lubricants, scouring, dyeing and finishing materials, etc.
IN ATTENDANCE: William Alkus, Morton W. Levi, John W. Schenkel, James W. Lederer.

ROBERTS CO.
SANFORD, N. C.—(604)

EXHIBIT: Their short 48-spindle Arrow long-fiber spinning frame will be in operation, spinning various types of knitting yarns.
IN ATTENDANCE: Robert E. Pomeranz, Jonathan N. Pomeranz, Germinal N. Giraudi.

ROCHESTER BUTTON CO.
ROCHESTER, N. Y.—(333)

EXHIBIT: A new model of their Speed Feed shank button feeding machine in operation; also new versions of their Techperl, Starphire and Technoid shank button lines.
IN ATTENDANCE: Bernard Popkin, Harold Hasin, Robert Udowitch, Gunther Scheibert.

ROTHKOPF & CO., INC., MAC M.
BROOKLYN, N. Y.—(46, 47, 48)

ROYAL COTTON MILL CO.
SAXAPAHAW, N. C.—(104-105)

RUBENSTEIN BROTHERS CO.
MONTREAL, CANADA—(461-462)
See Hosiery Machine Corp. of America

SANITIZED SALES CO. OF AMERICA INC.
NEW YORK, N. Y.—(421)

SANTONI & COMPANY
BRESCIA, ITALY—(343, 348)

SAUQUOIT SILK CO., INC.
SCRANTON, PA.—(327-329)
See Malina Co.

SCHOLLER BROTHERS, INC.
PHILADELPHIA, PA.—(463-465, 474-476)

EXHIBIT: They will feature their Dura-Beau, Schollerized, Lanolized and the Hysorb finishes for conventional and stretch stockings and knitted fabrics. Also Lanolized WW for wash and wear fabrics.
IN ATTENDANCE: E. S. Atkinson, L. M. Boyd, E. J. Fitzgerald, Jr., A. T. Glenn, J. F. Noble, D. E. Robertson, J. O. Sweitzer, C. H. Schuettler, W. R. Sargent, W. S. Truette.

SCOTT TESTERS, INC.
PROVIDENCE, R. I.—(287-288)

EXHIBIT: Special attachments for knit goods evaluation together with a new Tensile Tester "CRE"; their IP-4 Serigraph and auxiliary equipment pertinent to the knit fabric field, such as Yarn Reel, Yarn evenness Controller, Yarn Skein Reel, etc.

SCOTT & WILLIAMS, INC.
LACONIA, N. H.—(231-242, 231A, 238A, 239A)

EXHIBIT: A great number of models of their circular knitting machines for the production of hosiery and socks, underwear and outerwear, including seven new models; also for the first time 2 models of their Automatic Micro Safety Looper.
IN ATTENDANCE: B. J. Faucette, H. G. Kellett, J. G. Schmidt, L. T. Colon, W. O. McMillan, F. W. Smith, W. D. Ide, D. B. Brinton, W. V. Shenk, J. S. Hubbard, R. W. Bennett, F. H. Hallenbeck, J. R. Seymour, A. W. Nealley.

SCOVILL MANUFACTURING CO.
WATERBURY, CONN.—(382)

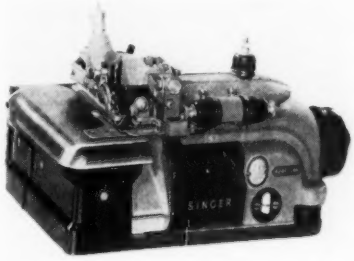
SELLERS DYEING COMPANY
SELLERS MANUFACTURING CO.
SAXAPAHAW, N. C.—(104, 105)

EXHIBIT: Various types of knitting yarns, including Durene, combed, dyed, Elasticot, Royal Egyptian, Royal Heathers, Nylike, and Pima.
IN ATTENDANCE: Frank Longcrier, Ben E. Jordan, Jr., Alton B. Smith.

SERVO STOP
c/o Mac M. Rothkopf & Co., Inc.
BROOKLYN, N. Y.—(46-48)

SHELL OIL CO.
NEW YORK, N. Y.—(346-347)

EXHIBIT: Its newly developed line of Vexilla Oils for textile machine and needle lubrication.
IN ATTENDANCE: W. E. Egge, J. Gilmore, G. Hornick, W. Kihlke, P. Wallis, R. Cokinda, W. Allbright, E. J. Colerick, G. Blackmore.



Singer's New Automatically Lubricated High-Speed Overedger

SINGER SEWING MACHINE CO.
NEW YORK, N. Y.—(225-230)

EXHIBIT: Various models of their industrial sewing equipment, incl. Overedging machines, Hosiery Seamer, Single needle Lockstitcher, Two-needle Zig Zag machine, Highspeed Automatic Tacker, and others.
IN ATTENDANCE: J. E. Wertz, P. R. Mohney, V. V. Roubik, J. Santella, A. Shensky, J. Crossin, E. Bobonis.

SOABAR COMPANY
PHILADELPHIA, PA.—(82A)

SONOCO PRODUCTS CO.
HARTSVILLE, S. C.—(507-508)

EXHIBIT: Cones, tubes, cores, and fibre-plastic spools and bobbins.
IN ATTENDANCE: C. W. White, J. A. Durkin, C. L. Burnham, O. F. Fayne, W. J. Durkin, J. W. Hillsgrove, W. S. Hawkins, W. E. Goodhue, H. M. Adams, W. K. Lewis, Jr., J. A. Reagan, Jr.

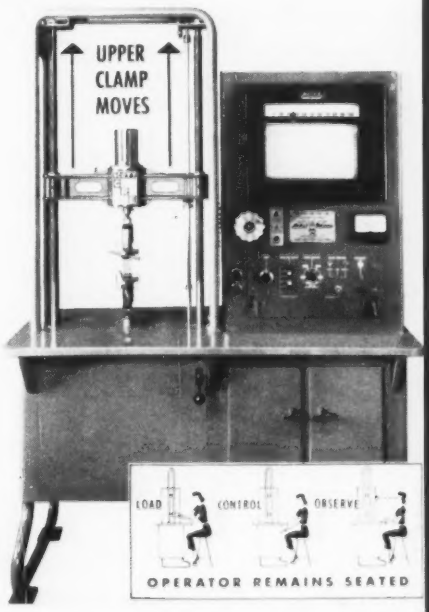
Scott Testers' new Tensile Tester "CRE"

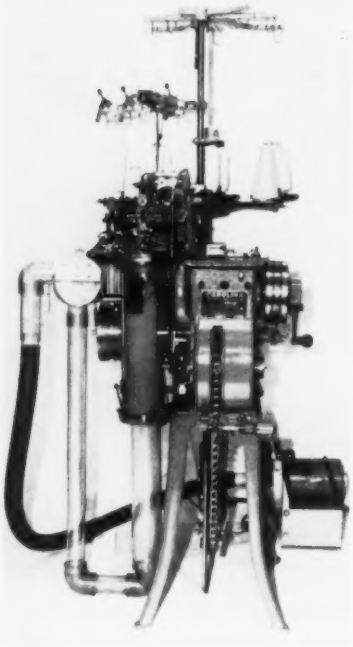
Sweater made of Rhovyl Fiber and Wool shown by Rhodia Inc.

SOUTHERN TEXTILE MACHINERY CO.
PADUCAH, KY.—(237, 288, 275, 276)

EXHIBIT: Their Model P, Sotco and Stylemaster Loopers, also Model 600 Bagging Machine and two models of their Inspection Machines.
IN ATTENDANCE: T. A. Paxton, Russell Shelton, R. N. Parkin, Billy Bryan.

Southern Textiles' New Stylemaster Looper





Speizman's Carolina Model K2F Hosiery Knitter

SOUTHERN TEXTILE NEWS
CHARLOTTE, N. C.—(75)

SPECIALTY MFRS. & SALES CO.
ACWORTH, GA.—(559-564)

SPEIZMAN CO., INC., MORRIS
CHARLOTTE, N. C.—(171-176)

EXHIBIT: Their new Carolina Ladies' Hosiery Knitters, Kwik-Trim Yarn Binders and Honeycomb Kwik-Change Pattern Drums.

IN ATTENDANCE: Morris Speizman, T. A. Valenstein, M. P. Deleo, A. C. Gregg, Larry Speizman, John Barnes, S. J. Haddad.

STAMPAGRAPH CO., INC.
BRONX, N. Y.—(147)

EXHIBIT: Hot iron transfers for identification, decorative and promotional purposes, also embossed labels and seals.

IN ATTENDANCE: George H. Chadwick, Carl Weilbacker.

STANDARD-COOSA THATCHER-CO.
CHATTANOOGA, TENN.—(317, 320)

EXHIBIT: Mercerized yarns, industrial sewing threads, and various knitted items made of their mercerized yarns.

IN ATTENDANCE: Emil S. Davis, Chas. H. Eagar, D. Brooks Barlow, R. C. Thatcher, Jr., F. R. Harris, R. Dan Pullen, Don Jensen, Wm. M. Hall, Jas. M. Smith, Robert G. Miller, J. O. Foil, Muir Lyon, James Schenck, James H. Clarke, Joseph Patrick, Robert Swan, Tomas Besosa, W. B. Sears, Karl Rudolf.

STANFORD MARLEY DISTRIBUTING CO., INC.
NEW YORK, N. Y.—(164A)

EXHIBIT: Various types of mending equipment for the hosiery industry and special Swiss Non-Drop mending needle for FF and jersey knit sweaters and Ban-Lon fabrics.

IN ATTENDANCE: Stanford Marley.

STAROBA INDUSTRIAL RESEARCH CO., LTD.
TORONTO, CANADA—(374)

STEELE CANVAS BASKET CO., INC.
CAMBRIDGE, MASS.—(40)

STEINBERG BROTHERS
BROOKLYN, N. Y.

STERLING ENGINEERING & MANUFACTURING CO.
WILKES-BARRE, PA.—(149)

EXHIBIT: Self-stacking boards for handling of bobbins, cones, tubes, quills, etc.; aluminum quill boards and self-stacking tube boards with flexible holder to allow for yarn shrinkage, also yarn handling trucks.

IN ATTENDANCE: George McGee.

STOLL & COMPANY, H.
UNION CITY, N. J.—(289-291)

STONEHILL KNITTING MACHINES CORP.
BROOKLYN, N. Y.—(284-286)

EXHIBIT: Various models of flat knitting machines and border machines of Universal Maschinenfabrik, Westhausen, Germany; Their ribbon cutting and string machines.

IN ATTENDANCE: Dr. Rudolf Schieber, Herbert Steinberg, Julius Steinberg, Arnold Steinberg, David Steinberg.

STOP-MOTION DEVICES CORP.
BROOKLYN, N. Y.—(903-908)

EXHIBIT: Wesco electric stopmotions for knitting and sewing machines; Retractible electric needle protectors; Sentinel press-off detectors; Pronger hole and press-off detectors; foam rubber seats; cone holders; tension assemblies, and their newly designed stop motion heads.

IN ATTENDANCE: N. J. Tellerman, V. G. Chaplin, G. F. Connors, E. M. Tellerman, F. Weston.

STREET COMPANY, JOHN F.
PHILADELPHIA, PA.—(379, 380)

SUPREME KNITTING MACHINE CO., INC.
OZONE PARK, N. Y.—(489-498)

EXHIBIT: Circular knitting machinery for outerwear and underwear fabrics, being either improved versions of current models or entirely new models, shown for the first time.

IN ATTENDANCE: Lester Mishcon, Sidney Mishcon, Bernard Narker, Irving Golden, Jack Radin, Joseph Tietlebaum, Sidney Beinenfeld, Clyde Dupuis.

TALCOTT, INC., JAMES
NEW YORK, N. Y.—(332)

EXHIBIT: Being factors, they will show in graphic form how factoring can assist a company in its expansion program.

IN ATTENDANCE: Matthew C. Spinner, Joseph A. Zeller.

TEMPLON SPINNING MILLS INC.
NEW YORK, N. Y.—(261-262)
See Chemspun Yarns, Ltd.

TEXTILE INDUSTRIES
ATLANTA, GA.—(106)

TEXTILE MACHINE WORKS
READING, PA.—(517-526 Knitting Machine Div.—510-513 Wire Products Div.)

EXHIBIT: The Knitting Machine Div. will show the latest model CK-A Circular Knitting Machine for men's and boys' fancy patterned hosiery; MF-400 Machine for the production of ladies' seamfree hosiery; samples of outerwear made on the "Reading" FF Machine as well as stockings from their Type 60 FF Knitting Machine.

The Wire Products Div. will show latch needles and flat stock by The Arrow Needle Co. The new high speed "Reading" Tricot Machines will also be illustrated. Special plane service is available for those who want to see their Type 60 FF Knitting Machine and the new Tricot Machines in operation at Reading.

IN ATTENDANCE: L. R. Thun, E. P. Master, N. E. Richards, R. J. Ryan, J. E. Kline, H. G. Fiedler, R. W. Weaver, E. A. Shoemaker, E. Paige, H. R. Wade, C. R. Moyer, P. Kroener, B. F. Coile, H. Printz, R. Janda, K. Williams, C. R. Erb, L. T. Yeager, H. R. Kaak, D. J. Hehr, D. L. Heydt, D. A. McDonnell, E. R. Zettlemoyer, W. H. Haupt, H. Blickle, L. P. Garrigan, W. Dresher, E. Krank, C. Falconnier, M. Coudeu, B. Peat.

TEXTILES, INC.
ABINGTON, PA.—(136, 137)

TEXTILE WORLD
NEW YORK, N. Y.—(299-300)

TEXTURED YARN CO., INC.
NEW YORK, N. Y.—(44-45)

THEILER CORP., H. J.
WHITINSVILLE, MASS.—(29, 36)

EXHIBIT: Schweiter Vario Cone Winder type KM 5b/7; other winding and unwinding equipment; a new yarn delivery device and a new motorized muff expander.

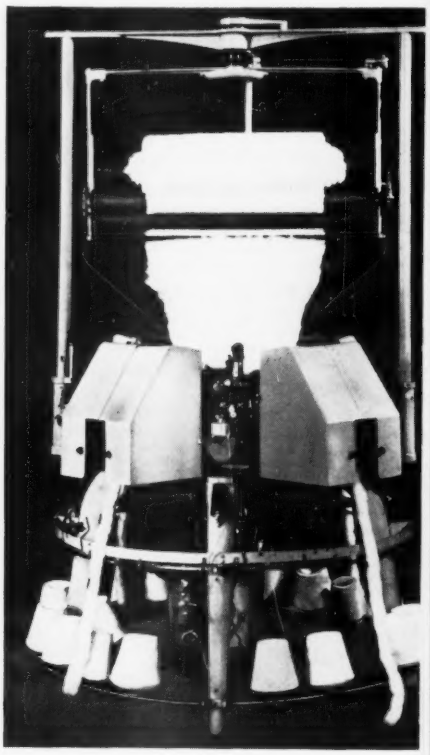
IN ATTENDANCE: H. J. Theiler, Hans Badertscher.

THREADS, INC.
CHICAGO, ILL.—(64, 65)

TOMPKINS BROS. CO., INC.
SYRACUSE, N. Y.—(102-103)

EXHIBIT: High pile fabric will be knitted on their S-1 Junior circular spring needle machine; a regular S-1 Junior machine will be in operation, making fleece fabrics.

IN ATTENDANCE: A. W. Ingalls, W. P. Limbacher, R. F. Yackel.



Tompkins' Model S-1 Junior Circular Spring Needle Machine

TORRINGTON CO.
TORRINGTON, CONN.—(301, 302, 311, 312)

EXHIBIT: Every type of knitting machine needle, sewing machine needle, and other special needles; a new finish "Lustorr" developed for their needles which makes them rust-resistant for better storage life; angular pressed rivet construction for latch needles will be introduced, as well as other innovations.

IN ATTENDANCE: W. W. Bielock, W. R. Reid, Jr., C. H. Rowe, C. R. Johnson, L. W. Losee, E. F. Didier, L. P. Burghoff, R. Shepard, H. M. Deming, A. V. Maurer, F. A. Howard, Jr., W. B. Meeteer, D. A. Burghoff, H. D. Blake, H. S. Gordon, H. E. Gosling, Sr., C. T. Spalding, W. Myers, R. L. Brace, J. J. McCaffrey, L. T. Mettling, E. P. Schwarze, J. W. Beaber, W. A. Patz, H. E. Gosling, Jr., G. B. Walls, G. T. Stanley.

(Continued on Page 85)

ORBIT HIGHER

with Quality dyestuffs from

for all fibers and blends

Direct colors for cellulose . . . fast to light and washing . . . automotive and resin fast

Nylon colors with extreme wash and light fastness

Colors for dyeing and printing nylon. Supranyl means
- level and neutral dyeing
- consistent results
- Barré effect eliminated

Polyester dyes . . . all synthetic fiber union

belle chem means ULTRA fast*

BELLE COLORS

Pigments and Intermediates

Belle Chemical Company, Inc. / Reading, Pennsylvania / Charlotte, North Carolina

*when aftertreated with Belleloc CN or Belleloc VS

Other Products from BELLE.....

.....To up-grade the quality of Your production

Belleloc N-100

After treatment for nylon colors where extreme fastness to washing and light is desired.

BH-56

Compatible with all Belle direct colors . . . eliminates use of strong acids when dyeing with acid colors . . . makes level dyeing colors out of "Dogs" . . . and eliminates two bath methods in union dyeing (between Polyester Fibers and Wool . . . Cotton and Polyester Fibers).

B-57 Bellenol

All purpose detergent and penetrant for dyeing and processing all fibers . . . both natural and synthetic.

Padtite

Vehicle for continuous dyeing of direct colors on viscose and cotton fibers . . . imparting extreme wash fastness to colors and build up of hand.

DC-55

Spot-proof carrier which insures level dyeing and makes one-bath dyeing possible . . . as a stripping agent, DC-55 does not destroy colors and has no harmful effect on fibers . . . residual amount left in goods is non-toxic.

Belleloc GZ

Resin treatment for cotton and viscose affording shrinkage control, crease resistance and color fastness . . . low tendering effect . . . no appreciable increase in hand.

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Write today for more detailed information.

the most

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finish since synthetics began!

ASTON ANTI-STATIC FINISH — FOR ALL SYNTHETICS

WANTED BY THE CONSUMER—FOR COMFORT

Think of offering slips that never cling or ride up from static! Dresses and sleepwear that never become hot or clammy . . . that throw off moisture and heat to comfortize for all-season wear . . . "Men's" suitings that never attract lint, dust, or dirt.

WANTED BY THE MANUFACTURER—FOR PRODUCTION EFFICIENCY

ASTON provides static free, smooth production . . . prevents lint attraction from one fabric to another . . . is easy to apply.

WANTED BY THE GARMENT MAKER—FOR BETTER CUTTING

Astonized fabrics cut smoothly . . . will not creep.

WANTED BY NURSES, DOCTORS, OTHERS—FOR SAFETY

Astonized fabrics are static-free . . . will not cause sparking where inflammable or explosive material is present.

WANTED BY CONVERTERS AND BUYERS—FOR GREATER SALES!

Astonized fabrics sell faster . . . open an entirely new sales world for all concerned with fabric and finished garment sales. And talk about promotability . . . "ASTONIZED" is your "Buy Word" of the industry. Aston's acceptance is already attested to by the many well-known companies that have been licensed for its use.

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FOR KNITWEAR WITH GLITTER...

there's nothing like

METLON® with MYLAR*

the soft-touch metallic yarn

METLON-*with-Mylar* IS SOFT YET STRONG...
soft and supple enough to blend with the finest natural
and synthetic fibers, strong enough to resist breakage
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the first metallic yarn to be Certified Washable
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Sun, salt water and salt air won't destroy its brilliance.

METLON-*with-Mylar* CAN'T SCRATCH...
can be safely used in all garments which
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bathing suits, lingerie, even foundation garments.

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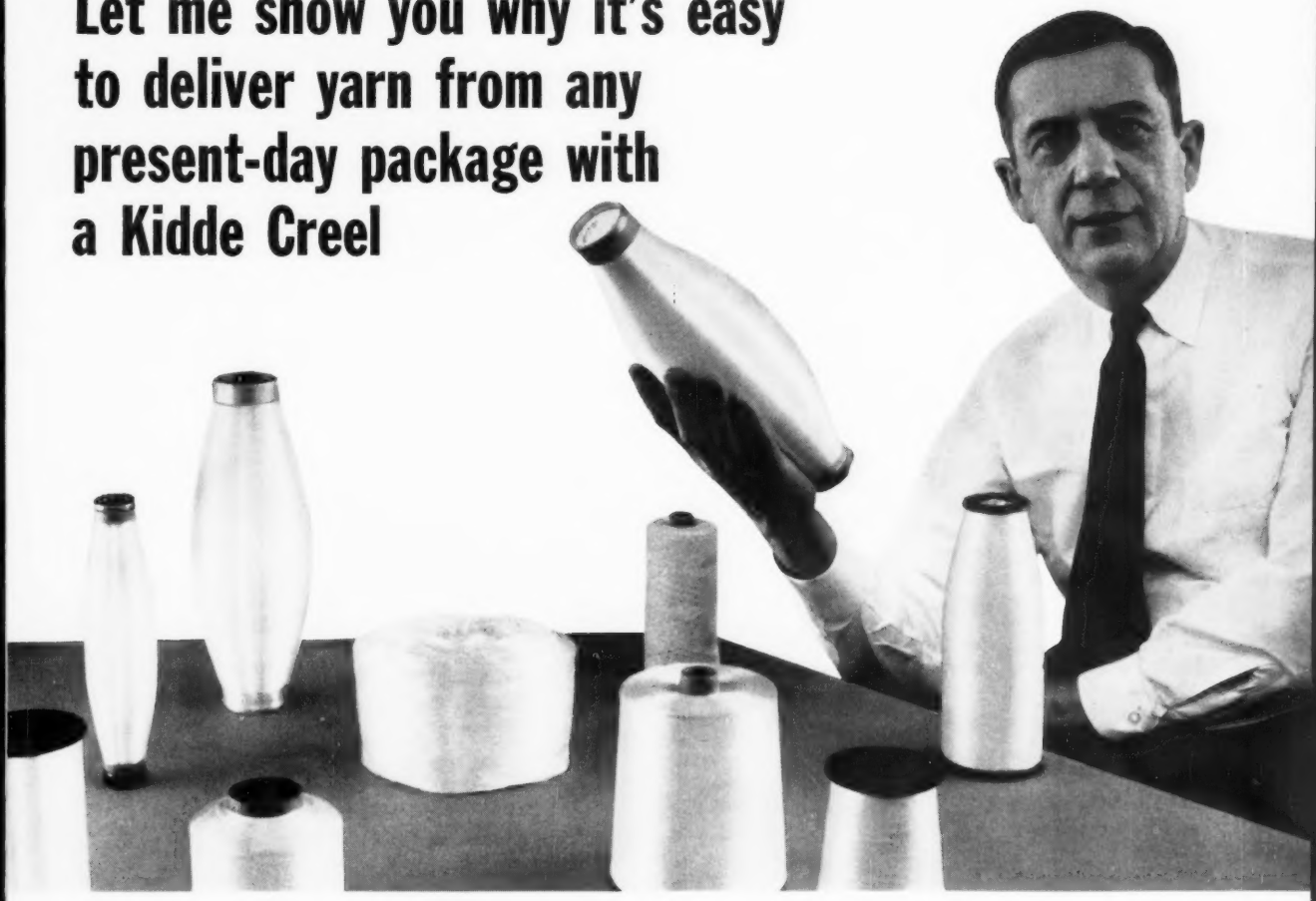
METLON SPINS A BETTER YARN!

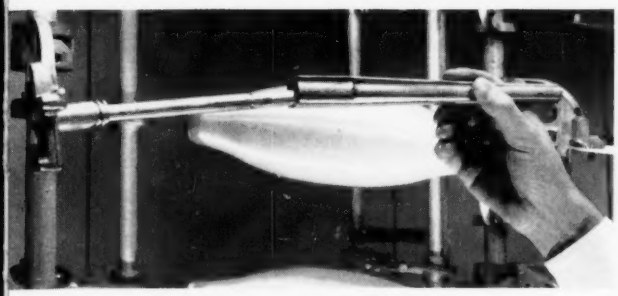
*DuPont's Polyester Film

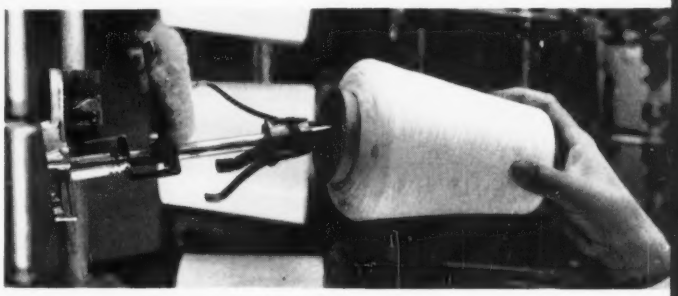
Let me show you why it's easy to deliver yarn from any present-day package with a Kidde Creel



You need only a basic holder and adapters to handle any yarn packages on the Kidde creel. You can see in the picture at bottom left, for example, how easily the basic pirn pin can be equipped with adapters to handle any pirn of textile yarn made today. The snap-on holder shown next to it accommodates any taper cone, as well as a range of straight packages. What's more, we'll design holders and adapters for future packages to accommodate them on the present Kidde creel.

Of course, this is only one Kidde feature. We could describe our tension devices and the uniquely simple Kidde stop-motion. We could explain how Kidde makes a creel to your specifications and how easily you can adjust its clamp-type construction to fit your changing needs. But we have a booklet that does all this. We'll be glad to send you one. Just write or phone.





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WINDER-REDRAWS • TENSOMETERS • PROCESSING MACHINES • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Big Change

(Continued from Page 32)

Robert D. McCabe, who succeeded Roy Cheney when he retired several years ago after a career as head of the Underwear industry's trade association going back to 1917.

The basic reason behind the new mood of thoughtfulness and questioning of industry goals prevalent among the Underwear Institute's leaders today is the awareness, forcibly pointed out to them by McCabe, that sales of knit underwear are showing little expansiveness. He had pointed out to his membership, for example, that sales of lightweight undershirts for males over five years old in 1947 were running at 2.2 per male in 1947, and that by 1957 they had shown no greater increase than 2.8 per male. For woven shorts the figures are 1.2 per male in 1947 and 1.5 per male in 1957.

The question in the minds of underwear manufacturers affiliated with the Underwear Institute is whether such static consumption is satisfactory or whether they should take steps to increase it. There is among many of them a prevalent feeling that something should be done to get the consumption of underwear out of its rut and on an upward path. Along these lines, the Institute is studying the feasibility of a promotional program to get men and boys, just to speak of one segment of the population, to buy more underwear.

Also being ruminated by leaders of the industry affiliated with the Underwear Institute is whether their trade Association has not handicapped itself with too narrow a name. It is pointed out in these discussions that most of the member firms make other garments in addition to underwear—Hanes is a good case in point with its rich variety of sleepwear, baby wear and knitted leisure garments such as sport shirts.

These questions and similar ones as to the basic directions and the ultimate fate of their industry and trade association are straws in the wind. They reveal that the winds of change, sweeping over all aspects of American industry stronger than ever these days, are beginning to be felt in the underwear trade, long a quiet, relatively small segment of textile manufacturing. Such straws, bending in the breeze, indicate that the leaders of the industry realize that the world is changing and that consequently their industry must change with it.

Awareness that change begets change and that underwear companies and their trade association must keep up with the world's changes if they are to remain alive and prosperous may lead to new and newsworthy developments in the future in the fine old gentlemanly underwear industry and its fine old gentlemanly trade association. With Tom Moore as president, it is certain that the forces of change will be given full attention and steered skillfully into channels that will do the underwear industry the most good.

Ballston

(Continued from Page 34)

eight spinning frames of 144 spindles each and three mules with 368 spindles each.

Yarn from the spinning department is wound into knitting cones, and then moves along to the knitting department where some 300 odd Scott & Williams machines knit the socks. The sock blanks then go to the looping department and from there to scouring and bleaching. Currently some 75% of Ballston, production is in white socks. For the colored socks, stock is dyed in the company's own dyehouse.

Now ready to be worn, the socks pass to the packaging department. This is a function of increasing importance at Ballston in keeping with the modern trends in merchandising to present hosiery neatly and attractively packaged for display—and quick sale—in the increasing number of retail outlets that these days find the stocking and display of leisure and work socks a profitable item.

Packaging is largely handled by two Mercury machines installed several years ago. The machines insert the socks in polyethylene transparent bags printed with the Ballston label for the most part—Ballston Knitting Co. increasingly likes to emphasize its own brand name.

"Packaging," Walter Mooney says, "is changing the athletic and work sock industry." He believes that the individual packaging of pairs of socks is probably the most important single development to come along in recent years to give impetus to sales of these types of hosiery.

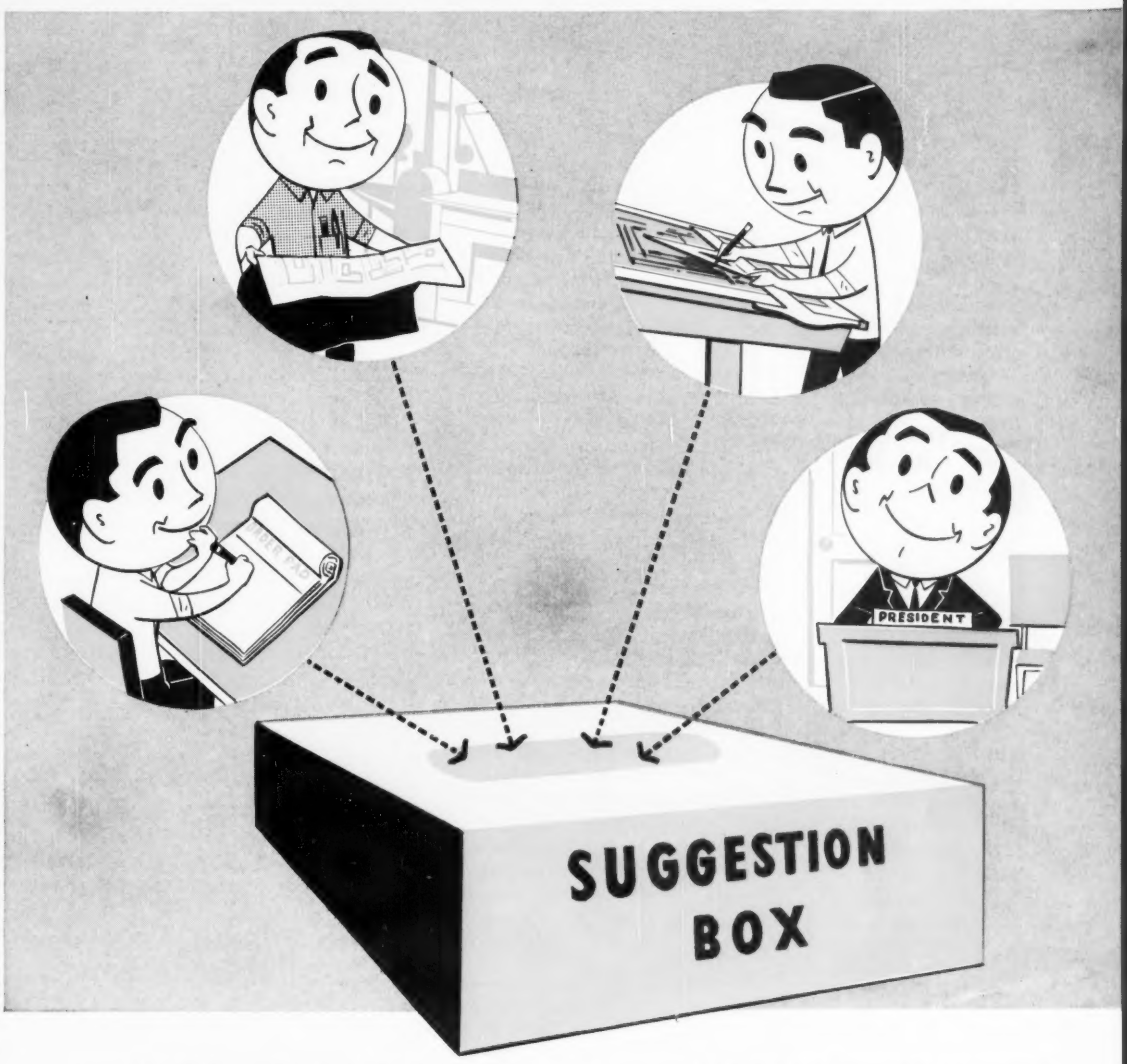
The modern packaging department at Ballston is not the only modernization that the company has carried out in recent years. By the end of this year, the company will have spent about $350,000 in a broad modernization program begun in 1957. An important share of these expenditures have been made in modernizing yarn preparatory equipment. Whitin broad band feeds and tape condensers have been installed in the card room. In the spinning department, four new Whitin 144 spindle frames already are in place and four additional frames are currently being installed.

The new frames, Mooney says, have considerably

(Continued on Page 99)

LOOPING DEPARTMENT—This line of operators busy looping sock blanks at Ballston gives some idea of the firm's big output.

DYEING and FINISHING
SECTION



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In textile printing

Minor savings mean major profits

By Raymond W. Jacoby
DYEING & FINISHING EDITOR

RECENT trade information disclosed the fact that between 1956 and 1958 13 textile printing plants had been closed and liquidated. These 13 plants had a total of 114 print machines. This fact in and of itself is quite astounding. But it is even more so when one considers that in December, 1955 there were 464 print machines in place. In other words, in two years approximately 25% of the textile printing capacity of the country had gone out of production.

The natural reaction would be that the remaining 75% should be in an ideal situation. To the contrary, one hears practically nothing but pessimistic opinions about conditions in the textile printing industry. Some print machines were put into production during the same period, so that the net loss was less than 114 machines, but in September, 1958 a check showed 289 print machines in operation printing cotton goods. (The total of 464 print machines includes those used on man-made fibers and silk.)

With such a radical change one might assume that other factors had changed similarly. Among these would be the proportion of finished goods which were printed, the proportion of printed goods which were of cotton as compared with man-made and silk fibers, and total print production. The last complete year for which figures are available is 1957. For the first eight months of 1958 the production of printed cotton goods has been at about the same rate as the entire year 1957. So figures for the latter year would be a fair basis for comparison. It may be surprising to realize that during the past 10 years there has been very little change in these factors. A comparison of these items for the years 1947 and 1957 shows:

Year	Machines Printing Cotton	Yards Printed (Thousands)
1935	494	1,043,701
1958 (Sept.)	289	1,800,000*

* Estimate based on 8 months' figure.

During this period while the number of cotton textile printing machines in operation decreased 40% the total output increased 80%. The common comment in connection with this statement is—"Everyone knows the print works have increased their hours of operation and improved their efficiency." If that is the only outcome of stating these facts it is a waste of time to do so. The reason for bringing them out is to emphasize very strongly the enormous possibilities of accomplishment and the reason why so many fall by the wayside.

The textile printing industry is frequently described as one of "feast or famine." However, the differences in yardage of printed goods produced in the "feast" years and in the "famine" years is not very great. Going back through the records for 25 years shows that the greatest yardage of printed cotton goods was in 1955. In that year the output was 2,125,755,000 linear yards. In 1957 the production was 1,814,699,000 linear yards and, as stated above, the figures for 1958 are at about the same rate. This is a

Figures are thousands of yards

	Total Goods Finished-Bleached Dyed, Printed	Total Yards Printed	% Total Finished Goods Printed	Total Yards Cotton Goods Printed	% Total Printed which was Cotton
1957	9,776,113	2,164,123	21.1%	1,814,699	86.2%
1947	8,915,147	1,923,960	21.6%	1,571,069	82.6%

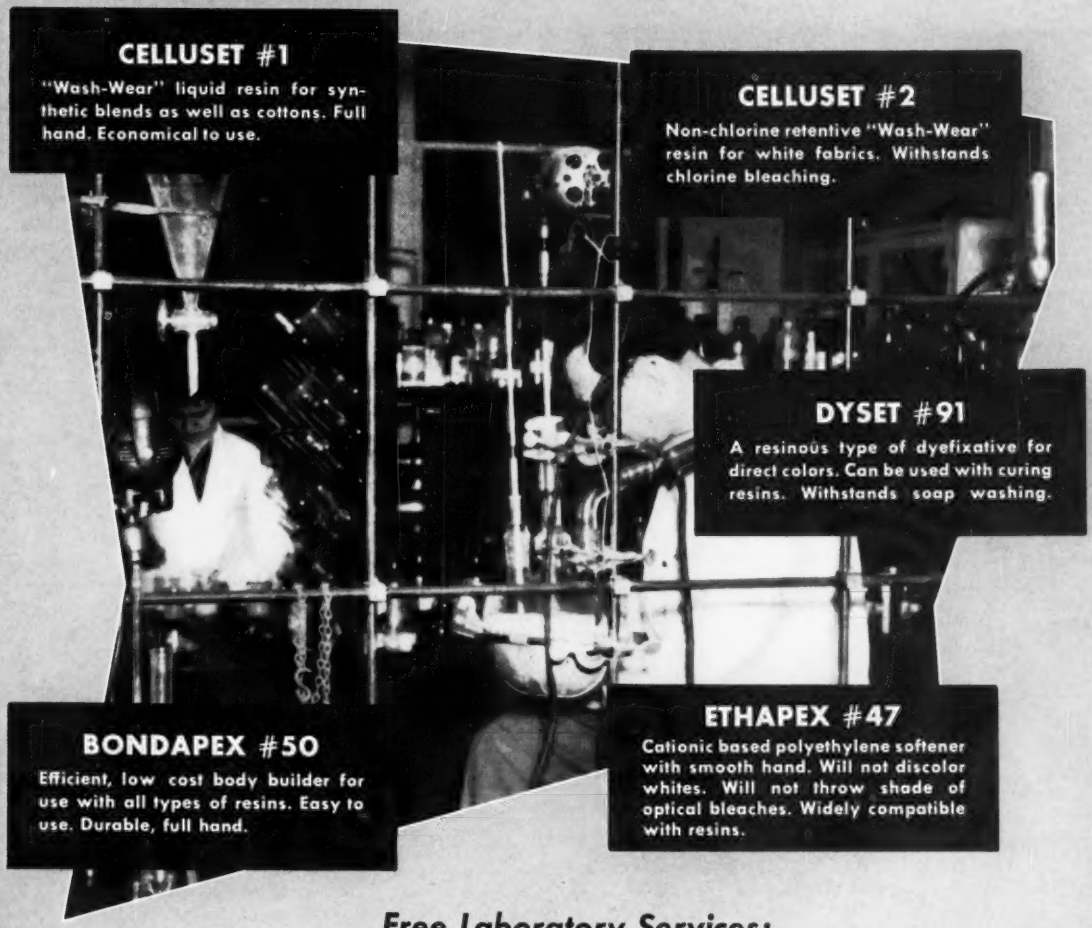
From the foregoing it is apparent that there were other reasons for this drastic reduction in the number of cotton printing machines in operation.

A tabulation of the textile roller printing machines in place, primarily printing cotton fabrics, gives figures going back to 1928. This shows that the maximum number of such machines was 494, which was in 1935. A comparison of machines in place and production at that time and at present is very revealing: drop of 15% from the all-time high, and a little less than 9% from the next highest year. Certainly this drop in volume should not result in the liquidation of 25% of the productive capacity. Evidently there are other causes, and a consideration of them could be beneficial.

It might be interesting to look over previous years' records of machines primarily printing cotton and yardage of cotton printed.

Specify

APEX RESINS and FINISHES for *WASH & WEAR* Fabrics



CELLUSET #1

"Wash-Wear" liquid resin for synthetic blends as well as cottons. Full hand. Economical to use.

CELLUSET #2

Non-chlorine retentive "Wash-Wear" resin for white fabrics. Withstands chlorine bleaching.

DYSET #91

A resinous type of dyefixative for direct colors. Can be used with curing resins. Withstands soap washing.

BONDAPEX #50

Efficient, low cost body builder for use with all types of resins. Easy to use. Durable, full hand.

ETHAPEX #47

Cationic based polyethylene softener with smooth hand. Will not discolor whites. Will not throw shade of optical bleaches. Widely compatible with resins.

Free Laboratory Services:

Complete laboratory services are available to our customers on "Wash-Wear" standards. This includes testing for tensile strength, shrinkage stabilization, chlorine retention, wash fastness and wrinkle and crease recovery.

SPECIAL FINISHES AVAILABLE FOR INDIVIDUAL PROBLEMS.

APEX CHEMICAL CO., Inc.

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Telephone: ELizabeth 4-5420

Year	Machines Primarily Printing Cotton	Yards of Cotton Printed (Thousands of Yards)
1928	426	figures not available
1930	471	figures not available
1935	494	1,043,701
1939	444	1,443,775
1943	327	1,242,088
1948	320	1,643,026
1953	344	1,820,144
1954	347	1,919,455
1955	372	2,125,753
1956	364	1,992,185
1957	315	1,814,000
1958	289	1,800,000 (estimate based on 8 months' production)

It is doubtful whether there is any other branch of the textile industry where as wide differences in opinion and practice from plant to plant exist as in the case of printing. Many factors are involved, and a small fraction of a cent a yard in any of them can be very important. Those persons who are in a position to see comparative figures are frequently astounded. These differences in opinions and practices result in differences in operating costs and can result in success or failure of a company.

Factors To Watch

Some of the factors in which wide variations in practices and costs from plant to plant were found to exist are listed hereafter:

Bleaching (many items)
Mercerizing (machine speed, strength of mercerizing liquor, recovery of wash liquor)
Preparation for Printing (shearing, wet or dry framing)
Engraving (ground, depth, slash, surface or below)
Print Machine (packing, lapping, set, gauge of doctor, angle of doctor, doctor weights)
Print Machine Hour Production (machine speed, stop time)
Print Color Cost (per gallon, per yard)
Print Paste (body, working properties, cost)
Ageing or Steaming (time, temperature)
Tentering (temperature, speed, finishing materials)
Calendering (type of machine, speed of machines, temperature of rolls)
Total Steam Consumption

As has been stated above, very large variations in operations and costs in all of these factors have been observed. For example:

A plant engraved a set of print rollers but the engraving was too deep and the color cost was too high. A new set of rollers was engraved and they sent the deep rollers to another plant which wanted to use them. The latter plant said they were too shallow and asked permission to deepen them. With the shallower rollers the color cost was 1.31¢ a yard less than with the deeper ones. When the rollers were made deeper the difference in color cost would be still greater.

This is an example of the difference of opinion of men on the staff of two supposedly "competing" plants. In an industry which lives on fractions of a cent a yard such excess cost can be ruinous. In view of our technical achievements in many fields, it is surprising to find such an important item dependent upon individual judgement.

How Costs Can Vary

A plant printed several patterns. They received reprint orders and as they were very busy they arranged for another plant in the same company to do the reprints. The prepared cloth and print rollers were sent to them. The reprints were to be of the same patterns and same color combinations. When the work was completed they compared color costs per yard. The second plant's costs were 25% higher.

Plant A was doing a line of patterns at a certain finishing price and said they were just breaking even on cost. Plan B took the work away at a price which was 20% lower and said they were making money. Plant A is one of these which have since liquidated. Plant B is still operating.

Figures of pounds of steam used per 1000 yards finished varied 100% between two plants of equal size, in the same geographical area and doing similar work.

The net result of all of the foregoing is a considerable differential in operating costs. With any recession in volume of work, the most efficient plants, with lower costs, reduce prices in an effort to get business. The others feel obliged to follow suit, which results in liquidation, as has occurred during the past two years.

The desire for color is a natural human urge. Man also tends to duplicate nature, which is not only profuse with its use of color but always uses it in multicolor effects. The simplest way for man to obtain multicolor effects is by printing. While style trends change, prints always have been and probably always will be in demand.

Even with all the elimination of printing machines there is still a very large potential production. Operations can be carried on 24 hours a day, six days a week. The efforts to obtain business will, undoubtedly, continue to be very competitive. Although much progress has been made, there are still countless opportunities for careful study and supervision of every detail of operation, and hence cost. The alert and capable ones will, as they have in the past, benefit materially in the periods of "feast" and not suffer too much in time of "famine."

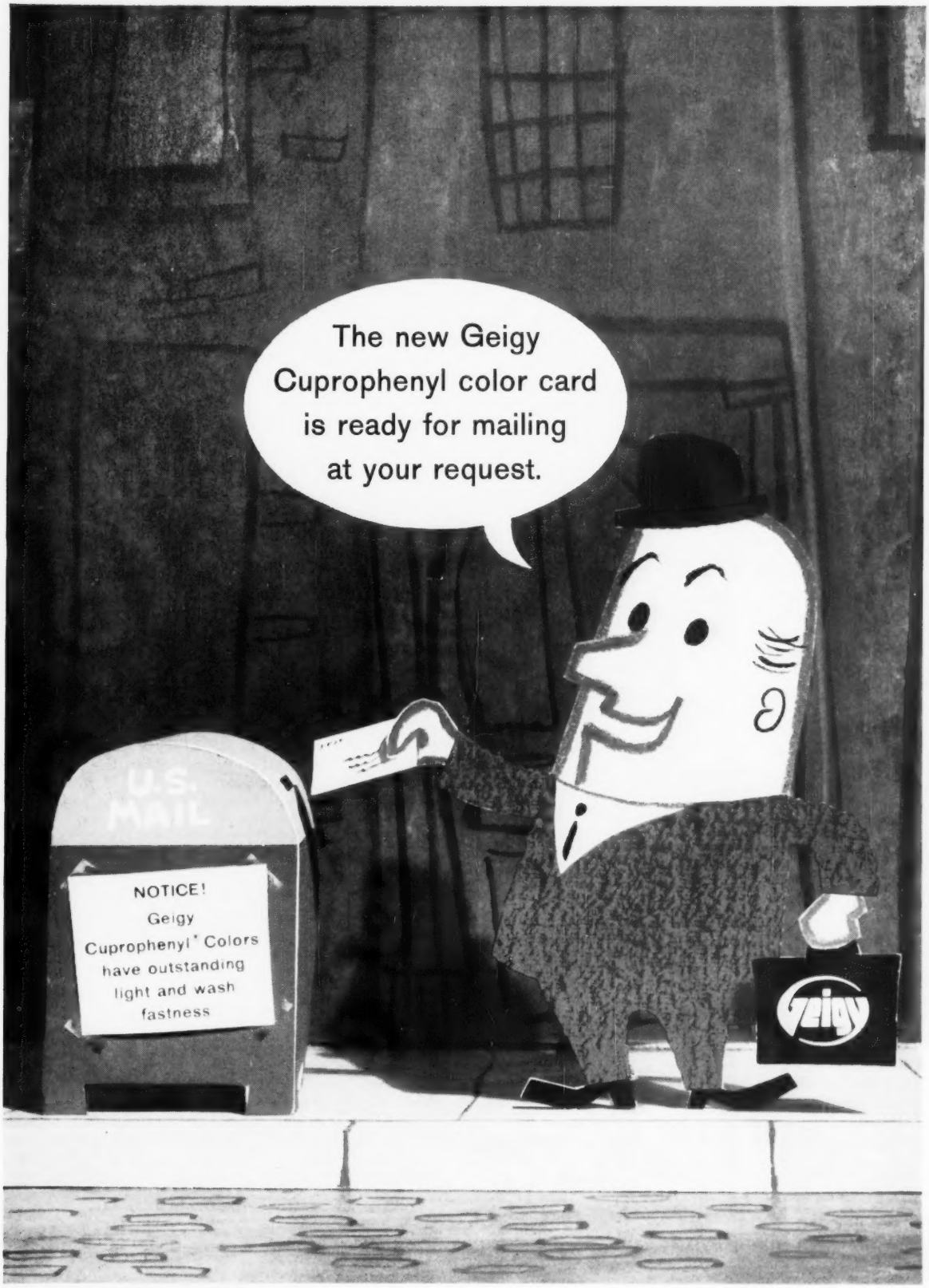
Operating statements currently being issued continue to show a wide range from satisfactory profits to very unsatisfactory losses. This is further evidence that time and money spent in study and control of every item of operation can mean better financial statements today and prevent liquidation tomorrow.

Test Wash-Wear Finish

American Viscose Corp. is testing a new wash-and-wear finish for rayon fabrics at several finishing plants. Arthur Wachter, manager of the firm's converting relations department, reported recently that, while all developmental work on the finish is not yet completed, good results have been achieved in pilot plant runs at Marcus Hook, Pa., the company's research center.

Horchler Gets Agency

Martin H. Horchler Co. has been appointed selling agent in the New York, New Jersey and Philadelphia areas by Synthetic Yarns and Synfoam Yarns, Inc., it was announced by T. Leo Power, general manager of both firms. Synthetic Yarns was established in 1920 and throws all types of filament yarns. Synfoam Yarns, Inc., processes Helanca and other types of nylon stretch yarn.



Geigy Dyestuffs Division of Geigy Chemical Corporation, Saw Mill River Road, Ardsley, New York.

EVEN DRYING OF WIDE GOODS—Here lace seven yards wide is taken up by pin tenter to move into new gas-fired dryer at Hope Valley's plant.

New dryer speeds lace finishing

BY THE EDITORS

LACE FINISHING, which has always presented unique problems, has in recent years become more complicated and difficult. These increased difficulties have been caused by the growing popularity of special finishes and the greatly expanded use of man-made fibers in lace making.

Hope Valley Dye Corp., West Warwick, R. I., a specialist in lace dyeing since 1936, has successfully coped with the increasing complexities of lace finishing by determined use of modern equipment. Jack Westerman, president, and Howard Westerman, vice president, along with Ray Wein, superintendent, have learned from meeting the requirements of their customers, that the finish of a fabric is an important factor in its saleability; and they have also noted that proper drying to a great extent, determines the quality of the finish.

At first all work handled by Hope Valley consisted of cotton and silk lace. But by 1948 it became apparent that lace made from the various man-made fibers, particularly nylon, was here to stay. Also, new types of finishes for cotton lace demanded special treatment; for these reasons Hope Valley put in a heat setting frame.

However, the volume of work requiring heat-setting continued to climb. It was soon obvious that the existing frame was not capable of handling the extra work. New fibers and new finishes requiring heat treatment to complete polymerization, produce time-temperature reactions, or cause penetration of thermo-plastic substances, made it evident that a more efficient means of heat-setting was necessary.

Hope Valley turned to Andrews & Goodrich, Division of Midland-Ross Corp., to come up with a dryer that would cope with the special demands of lace finishing in the light of today's changing patterns. Hope Valley's specifications also required that the machinery maker design a unit that would fit into existing building limitations of the Hope Valley mill.

Most of the work handled at Hope Valley is Leavers lace in webs 36 yards long and in widths varying from 5 yards to 7 yards. And the bulk of this yardage is heat-set for one reason or another. Dress goods, which are mostly cotton, take the standard starch and gum finishes but there is a rising movement toward "drip-dry" cotton laces which requi.e special resin treatment.

Nylons, rayons and acetates are heat-set mainly to gain stabilization. The newer fibers such as Du Pont Dacron polyester are finding success in the lace field and it is anticipated that its use in lace will grow. Substantial quantities of texturized yarns are being consumed in the lace industry and this is another area marked for growth. Some raschel lace is handled at Hope Valley, but the yardage thus far is limited.

All these facts had to be taken into consideration by Andrews & Goodrich engineers. The result is that the new dryer differs somewhat from normal practice. Owing to the unusual width of the lace and the open construction of the fabric, one of the chief problems was to distribute the air in such a manner that the web will not become distorted by being whipped up and down or get stretched as it passes through the dryer. For this reason duct and nozzle design is different from the usual types and hot air is delivered on the face of the goods only.

The new gas-fired dryer, which, in Hope Valley's case has proven to be superior to the unit it replaced, is built over a 252-inch wide over-and-under pin tenter frame. The dryer is 50 feet long and 26 feet wide. It is divided into two sections so that lower temperatures can be maintained in the first half of the machine for drying. Higher temperatures are used in the second stage where the actual setting takes place. Only a top pass is used.

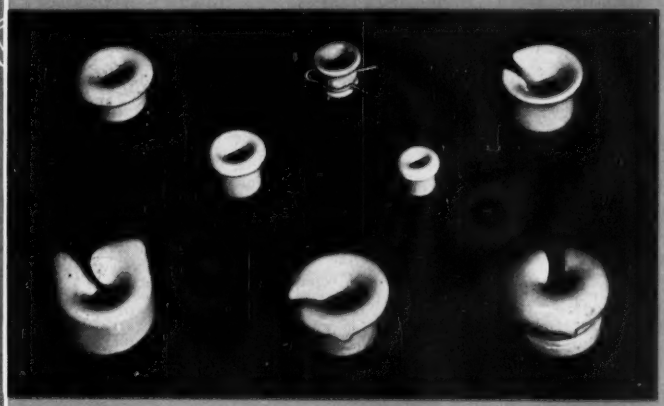
Uniform drying is being achieved from edge to edge with no perceptible temperature or air velocity variation throughout the heating area under control. This balanced air distribution is essential for uniform

(Continued on Page 97)

MACHINERY and EQUIPMENT SECTION

MITCHELL-BISSELL THREAD GUIDES

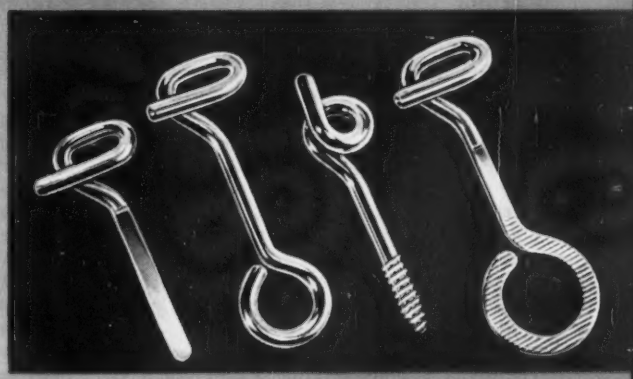
For Every Textile Service . . . For More Than 70 Years



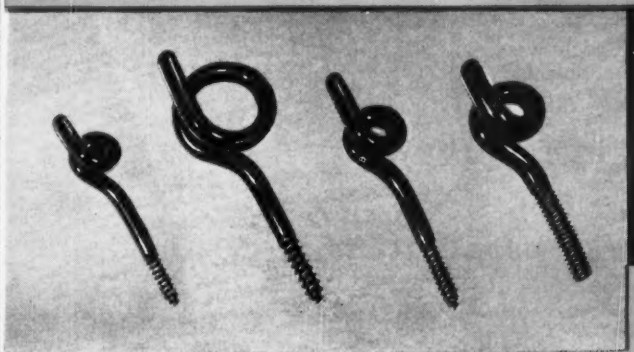
Above—"BLUE SATIN FINISH" PORCELAIN GUIDES.
An exclusive development of Mitchell-Bissell—guides with this finish are more resistant to thread wear than any glazed porcelain guides ever offered the industry. "Blue Satin Finish" Guides, instead of being shiny and glass-like, have a surface of thousands of small rounded grains closely packed together. Reduced wear and longer guide life result because, by breaking the continuity of contact between yarn and guide, friction is reduced. * U. S. Pat. No. 2,152,136.

Left—WHITE GLAZED PORCELAIN GUIDES.
The Mitchell-Bissell Company originated the use of porcelain as a thread guide for the textile industry. The white Glazed Porcelain Guides shown here are representative of thousands of patterns that have been sold to all branches of the textile industry since this company was founded over seventy years ago. Improved in quality from time to time they are still "standard."

Right—CHROMIUM PLATED STEEL GUIDES.
The plating on Mitchell-Bissell Chromium Plated Steel Guides is harder and denser than on any other wire guides. Our methods of fabricating and polishing develop a surface smoothness, with a mirror finish far beyond usual commercial standards. Because of their superior resistance to thread wear these guides are used extensively on machinery for processing rayon and nylon yarns and also for many other severe applications. Also available in Satin Finish.



Below—ENAMELED IRON GUIDES.
Where wire guides are desired, and service conditions do not require chromium-plated guides, our Enameled Iron Guides give exceptionally good service, with a low initial cost. Made with the care and craftsmanship that are standard practice on all Mitchell-Bissell products, these are recommended as centering and ballooning guides, and for cotton, woolen and other soft yarns.



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Scott & Williams offers

Lombardi wrap knitting machine

SCOTT & WILLIAMS, INC., Laconia, New Hampshire, has been licensed by Vincent Lombardi to manufacture the patented Lombardi Wrap knitting machine. In announcing this arrangement with Lombardi, Scott & Williams points out that purchasers of the patented machines will have a royalty-free license with respect to patented fabrics produced on the wrap machines. The machine has been officially designated as the Lombardi Pattern Wrap-Model LPW.

The patented Lombardi Pattern Wrap circular knitting machine represents a radical departure from existing techniques for incorporating both "sculptured" and/or smooth design effects in jersey fabric. Developed over many years, the machine is claimed to constitute a highly significant advancement in the art of fabric structuring and design.

According to Scott & Williams' standards, the unit will produce, in a wide range of weights, an impressive array of fabrics which combine textured surface interest, patterning scope and multi-color schemes in an infinite variety of striking arrangements. The method of fabric construction imparts the appearance of depth and warmth and yet insures a 3-dimensional fabric remarkably light in weight.

The machine will handle all types of natural and synthetic yarns. Especially unusual effects can be achieved with metallic, knop, bouclé, slub, mohair and chenille yarns. Significantly, the LPW will produce for the jersey (6½-7 oz.), suiting, coating, sweater, swimwear, children's, upholstery, corset and stole trades—all without change in any of the knitting mechanism.

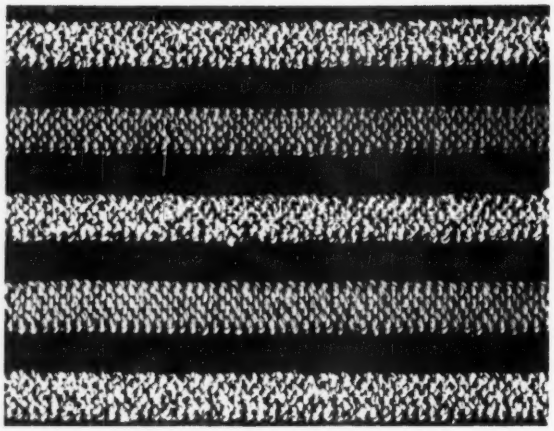
The machine will be a 32-feed, 26″ diameter, 18-cut, stationary cylinder, sinker-top machine with needle selection by the popular 3-position pattern wheel. The unit will come equipped with 4-finger striping boxes and conventional stop-motions. The heart of the machine is a patented superstructure which houses the unique "wrap around" elements for introducing effect yarns to groups of selected needles.

The important feature of the warp mechanism is that it enables the introduction of a wrap yarn to one or to a multiplicity of needles—in excess of 30—from a single yarn source. To those skilled in the art, this represents a considerable achievement over earlier single-needle wrap units in which it was necessary to provide an individual wrap yarn for each needle.

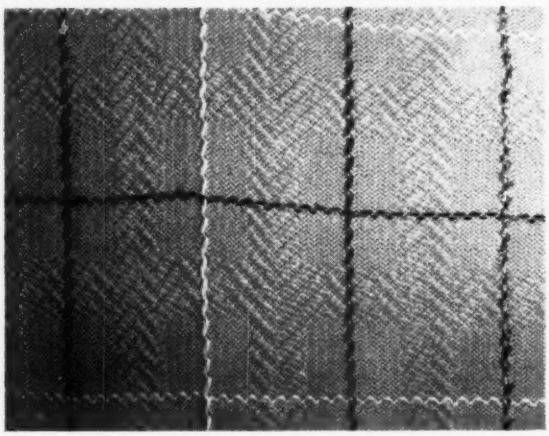
In view of the LPW feature wherein a single wrap yarn can be fed to a bank of needles simultaneously, it will be apparent that relatively few wrap yarns are required to produce extremely novel design effects. Each wrap yarn on the Lombardi machine will have an individual stop-motion associated with it.

Conventionally, design effects in jersey fabrics,

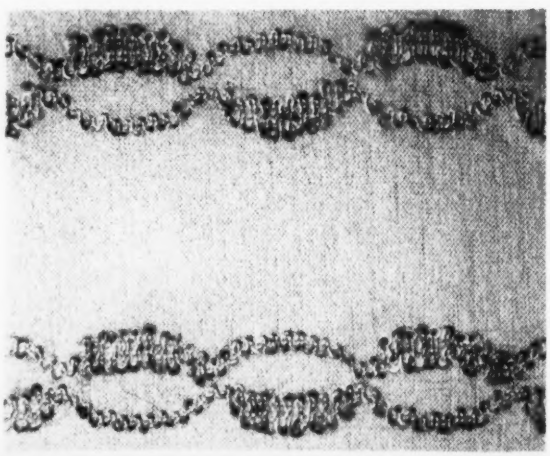
(Continued on Page 66)



This broad wrap design on textured elasticized body fabric is an example of the kind of material that can be knitted on the Lombardi machine.



This interesting "check over check"—a single needle overcheck on broad overcheck base—is another novelty knit easily produced with Scott & Williams' new machine.



Here is a multi-needle asymmetrical wrap pattern superimposed on a plain jersey base—another example of the styling versatility of the Lombardi knitter.

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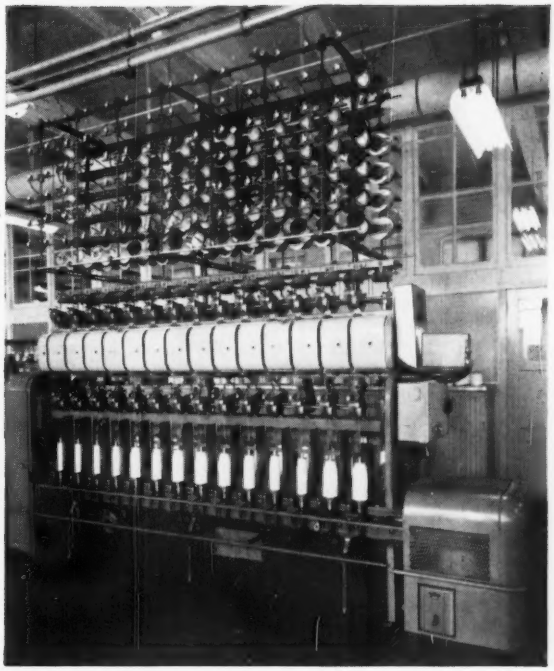
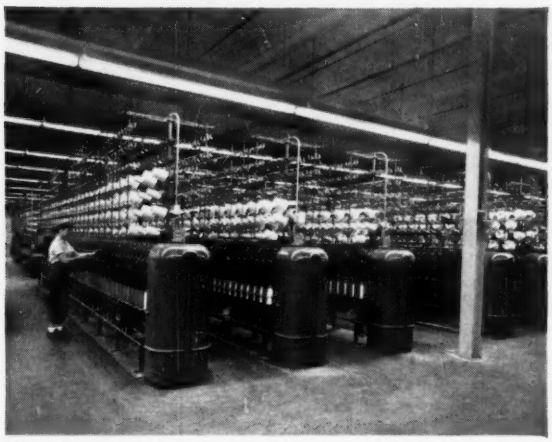
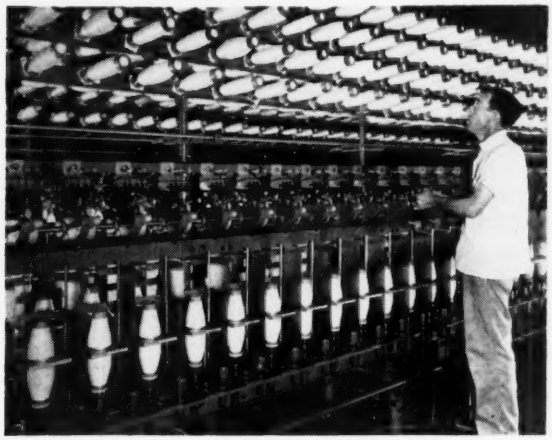


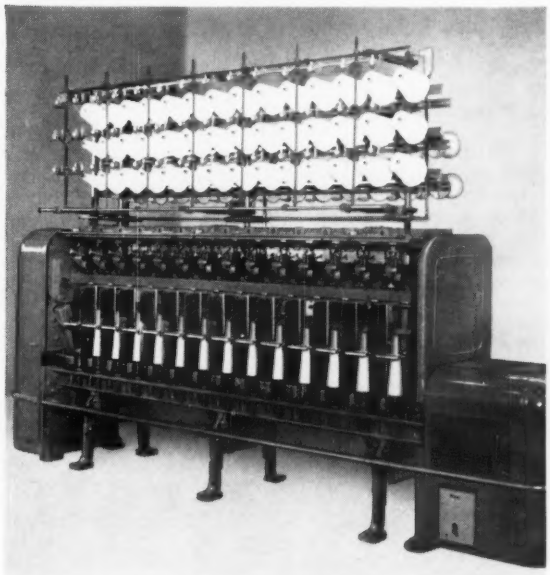
Only the Model 10 can use the No. 511 Saaba* attachment, to process uniform, top quality Saaba, the last word in textured yarn.



Worsted, spun synthetic and metallic yarns can be plied from cones, and taken up on large packages.

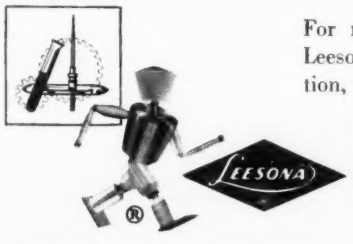


Glass yarn can be twisted from pirns to double-taper packages, and be used for filling and warping without rewinding.



Model 10 can take up yarn on cones, also produce straight wind, taper-top, and double tapered packages (filling or warp wind).

Member American Textile Machinery Association



23.7.7

For more information on how the versatile, low-maintenance, Leesona Model 10 Ring Twister can improve your twisting production, write for Bulletin 10-A.

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Scott & Williams

(Continued from Page 62)

whether appearing on the technical face or back of the fabric, are produced by a method of coursewise patterning. The use of stripers in conjunction with pattern-wheel needle selection to achieve this horizontal patterning is well-known in the trade. Many striking effects can be produced solely with the system. Yet those familiar with the ins-and-outs of fabric structure and design acknowledge the limitations and shortcomings inherent in this system of horizontal patterning wherein it is necessary to carry the effect yarn throughout, even though its contribution to the design of the fabric is in only isolated portions.

This imposes a considerable patterning restriction from the standpoint of bulk alone inasmuch as fabric weight is frequently directly proportional to the complexity of the pattern to be produced. Furthermore, horizontal patterning is normally limited to 4-color work since 4-finger stripers are usually employed to produce these design effects—and with appreciable decrease in the number of productive feeds. Also, horizontal patterning restricts the use of expensive effect yarns since their indiscriminate use contributes appreciably to the weight and cost of fabric and makes their use prohibitive, except in special applications. Finally, horizontal patterning, in view of the method by which effect yarns are carried throughout the fabric, detract from the pattern definition which the effect yarns are intended to produce.

The limitations inherent in the conventional system of coursewise patterning prompted the Lombardi wrap machine development. The LPW enhances the usual fabric design scope by providing a system of walewise patterning—sometimes called vertical striping—which can be actuated either to complement the conventional coursewise patterning or to operate independently of it. Both the horizontal and vertical patterning are selectively and, consequently, independently operative through normal chain means. Virtually unlimited design effects are obtainable with a minimum of effect yarns. Plaids of infinite variety, symmetrical as well as asymmetrical designs, continuous or isolated motifs, etc., all with textured and /or smooth surface effects and in a myriad of color combinations, are readily produced on the patented machine.

Although the fabrics knit on the LPW are of basic jersey construction, they present in some structures striking similarity in appearance to the better type of woven fabrics, yet at the same time retaining the warmth, draping qualities, and handle characteristic of knitted goods. It is claimed that this feature alone will make the machine of special interest to knitting mills seeking the "woven look."

Similarly, the machine should appeal to weaving mills desirous of diversifying their existing lines by the addition of knitted fabrics which possess many of the attributes of the better type woven fabrics.

For further information about this new development write the editors.

ATMA Elects W. K. Child

William K. Child, vice president of Draper Corp., was elected president of the American Textile Machinery Association at its recent 26th annual meeting in Boston, Mass. Robert Leeson, Universal Winding Co. president, was elected vice president, and F. Gorham Brigham, Jr., secretary-treasurer of Saco-Lowell Shops, was renamed treasurer. The board of directors also was expanded, to include Thomas H. West, Draper Corp. president, as a representative of ATMA's new Division VII.

Emergence of the ATMA as a "leader group" in business and economic planning was pointed up at the annual meeting. James H. Hunter, head of James Hunter Machine Co. and retiring ATMA president, outlined unusual recent events and their impact on both the textile and machinery industries. "Their accumulative effect makes 1959 not only a time of challenge," Mr. Hunter said, "but a period of opportunity for the two industries."

J. H. Bolton, Jr., chairman of the ATMA Exhibition—International, at Atlantic City, N. J., from May 23-27, 1960, gave a report on preparations for the show. He also reported the association received a plaque from the U. S. Department of Agriculture and the Department of Commerce, for their efforts in planning an exhibition of American-built textile machinery at the International Trade Fair at Poznan, Poland, in June, 1958.

Left to right:
Robert Leeson, Universal Winding Co.; James H. Hunter, James Hunter Machine Co., William K. Child, Draper Corp.; F. Gorham Brigham, Jr., Saco-Lowell Shops.

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For Takeup Winding of Man-Made Fibres

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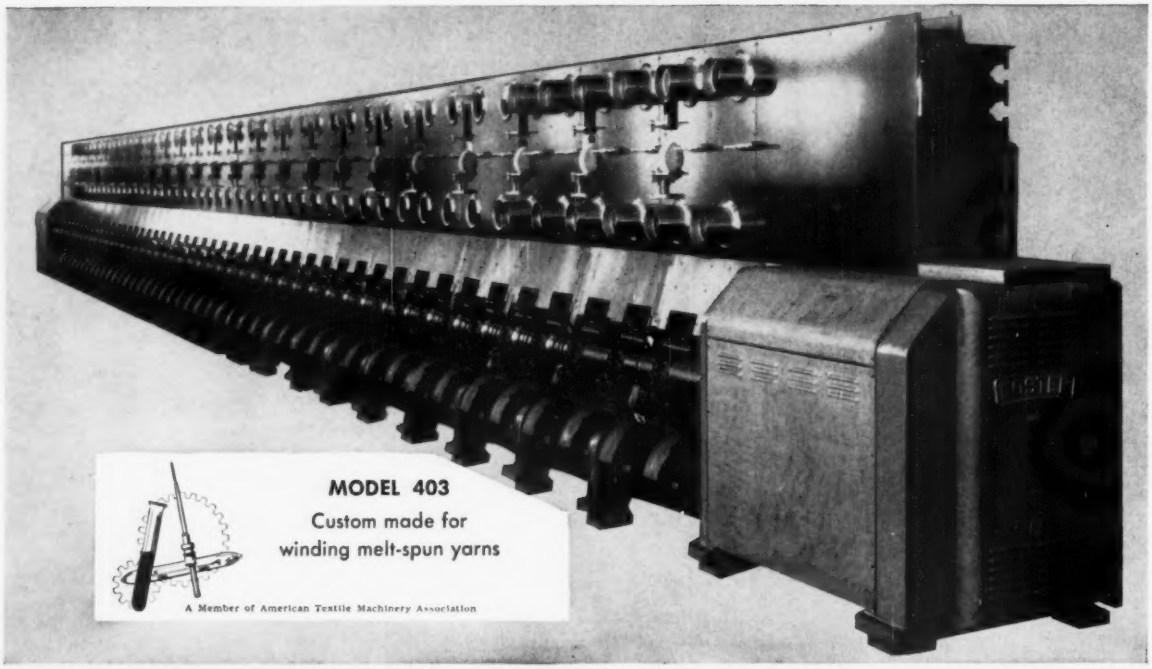
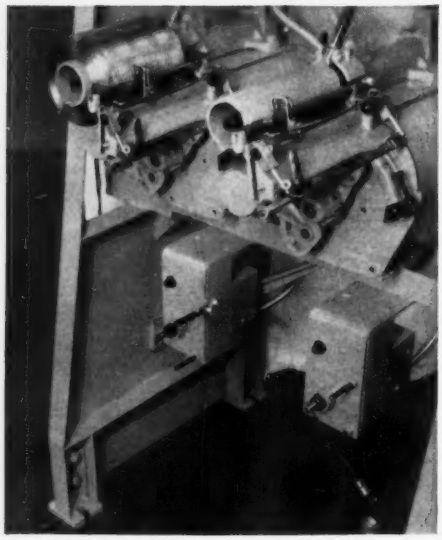


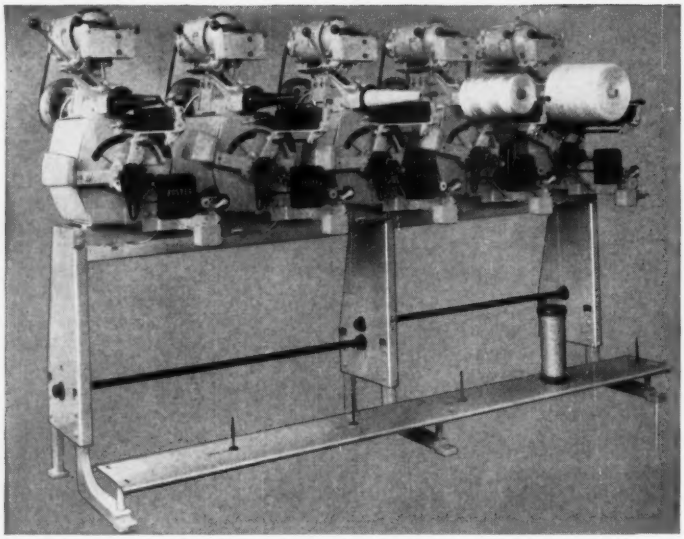
MODEL 403

Custom made for winding melt-spun yarns

A Member of American Textile Machinery Association



TENSIOMATIC — Adaptation for winding wetspun or dry-spun yarns.



MODEL 78 — Standard for winding wet-spun or dry-spun yarns.

We have had years of experience in designing and manufacturing custom made equipment for the takeup winding of man-made fibres — melt spun, wet-spun and dry-spun. Our customers in this field include some of the biggest producers, both in this country and abroad.

Whether you require a machine that is custom made throughout, or an adaptation of one of our standard models, we will be glad to work with your engineers in the strictest confidence.

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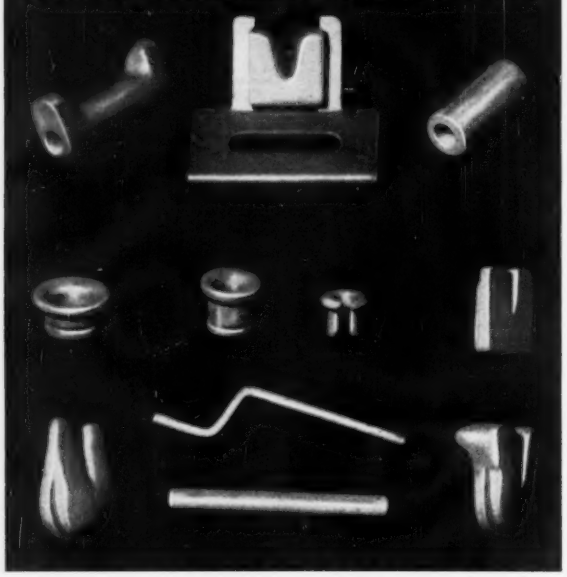

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Saco Buys Electronics Firm

Saco-Lowell Shops has entered the electronics field with the purchase of Servo Dynamics Corp. Servo will become a wholly-owned subsidiary of Saco-Lowell, with A. R. Abbott, its president, continuing as operating head.

Servo motors, which comprise a large part of Servo Dynamics' production, are extremely compact, some of them being only ¾ inch in either diameter or length. They are used for a wide variety of tasks in guidance systems and to activate pumps and hydraulic systems for aircraft, submarines, missiles, and rockets. They are known in the industry not only for the compactness of their design but also for their high quality and competitive price, according to Thomas J. Ault, president of Saco-Lowell.

"The field in which Servo Dynamics is active", Ault said, "is one with an extremely high potential for growth."

The company has its plant in Somersworth, New Hampshire, with ample space for future expansion. Current employment is approximately 50 people.

Tyrex Promotional Drive

Tyrex, Inc., promotional organization representing five manufacturers of tire cord, has launched the second round of a merchandising campaign for Tyrex rayon tire cord. Introduced last September the new viscose cord tires are being offered as original equipment on 1959 models by every auto maker, according to Tyrex. In this year's campaign Tyrex will seek to reach the replacement market. Tyrex is produced by American Enka Corp., American Viscose Corp., Beaunit Mills, Inc., Courtaulds (Canada) Ltd., and Industrial Rayon Corp.

Recent tests in the Nevada desert are reported to have shown that Tyrex viscose tire cord outlasted competing nylon cord by a 24% margin. Testing was conducted by the Nevada Auto Testing Center, at speeds generally ranging from 110 to 128 miles per hour.

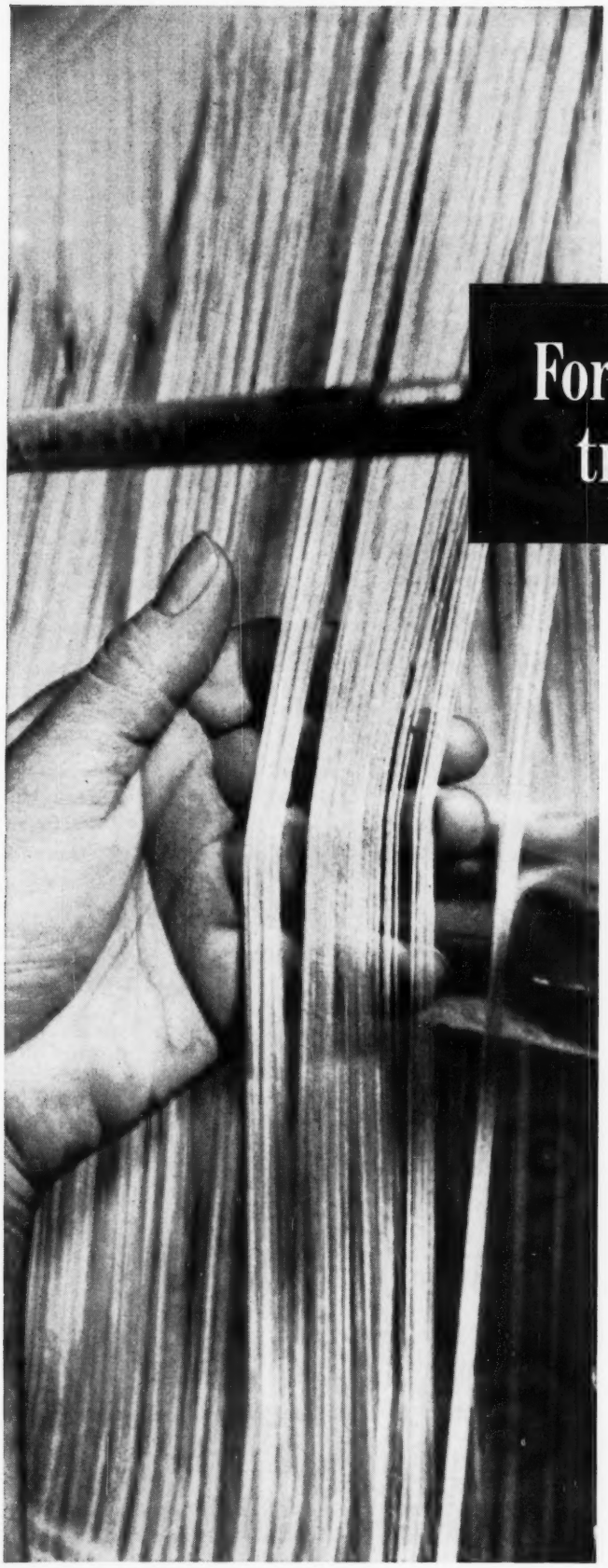
Johns-Manville Buys L.O.F.

Johns-Manville Corp. has purchased L.O.F. Glass Fibers Co., said to be second largest in the fiber glass industry in annual sales. All assets and the going business of L.O.F. have been transferred to a newly-organized Johns-Manville subsidiary, Johns-Manville Fiber Glass, Inc. R. H. Barnard has been elected president of the subsidiary, the same post he held with L.O.F. Francis H. May has been elected vice president and general manager. Offices are in Toledo, Ohio.

The new J-M division is a research, development and production division only, and it will supply fiber glass products to five other J-M divisions. The fiber glass unit will continue manufacturing fiber glass products previously marketed by L.O.F., including yarns, bonded mat, insulations, translucent plastic panels reinforced with fiber glass and combinations of these with other products and materials.

Preliminary studies for a fiber glass expansion program are already under way, according to A. R. Fisher, chief executive officer of Johns-Manville.

Productive capacity of three fiber glass plants, however, will be increased immediately. New equipment for fabrication of more chopped textile yarn mat at the Waterville, Ohio facility will be in operation shortly. Additional blanket machines almost doubling capacity at the Corona, Calif., and Defiance, Ohio plants will be activated by late spring, Mr. Fisher said. The former seven L.O.F. fiber glass plants taken over bring to 33 the number now operated by Johns-Manville.



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In warp sizing, TEN-O-FILM starches cook completely in thirty minutes and remain stable through prolonged heating and circulating. Sizing and desizing of all types and blends of yarns may be done at lower temperatures to reduce "bleeding," and permit use of a great variety of dyes.

In finishing, the clarity of film produced by TEN-O-FILM is a real advantage. There is no masking of colors in dyeing man-made fibers.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

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The Fleissner Suction Drum Dryer evaporates three times the quantity of water per square foot of drying surface compared to any other drying system and has adjustable overfeed from minus 20 to 150%.

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1. **Extremely low steam consumption**
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AATT

Elements of fabric stability

By G. V. Lund
COURTAULDS (ALA.) INC.

RELAXED FIBERS do not shrink on washing. Table I (Meredith) shows that nylon, cotton, wool, silk and viscose rayon increase in length as well as in diameter when they are wet. In spite of this increase in fiber length on wetting, however, the fabrics into which the fibers are made almost invariably become smaller. Collins (Shirley Institute) has given, perhaps, the best account of the mechanism involved in cotton fabrics. His account, together with the work of Speakman and of Bogarty, Sookne and Harris, enables us to divide the way in which fabrics shrink into three parts which we will discuss in order.

TABLE I

Fiber	Percentage Increase in Length	Percentage Increase in Diameter
Nylon	1.2	5.0
Cotton	1.2	14.0
Wool	1.2	16.0
Silk	1.7	18.7
Viscose Rayon	3-5	26.0

1. SHRINKAGE DUE TO RELAXATION OF FIBER STRESSES

It is well known that when fibers are stretched beyond their elastic limits, they do not recover their original dimensions until they are wet. It is also well known that hydrophilic fibers may be stretched wet, and, when dried, will retain an approximation to their extended state until they are wet again, when they will contract approximately to their original dimensions.

We also know that in the manufacture of fabrics, dry stresses are imposed, particularly in weaving; and that, in the finishing of fabrics, stresses are inevitably imposed on the fabrics in the wet state, if only because of the necessity to pull the fabric round rollers, and from place to place in finishing plants. We thus have a possibility of straining fibers before they arrive in the fabric. If fibers are strained in this way, we would expect them to relax again on the first wash.

Now to consider the size of this effect: According to Collins although shrinkages of the order of 10% or more from gray to stable state are common on cotton fabrics, this cannot be attributed entirely to shrinkage of the fiber on wetting. According to his data on cotton fabrics, it is safe to say that actual fiber shrinkage is not more than 2%, and is generally less than 1%. However, cotton is a fiber which is hard to stretch, both wet and dry. Thus it is not safe to say that his findings are directly applicable to more easily extensible fibers, such as rayon and wool. In fact, as the ease of fiber extension increases, so the magnitude of this effect would be expected to increase.

So we have here a possible source of fabric shrinkage that is known to be almost negligible in the case of a high modulus fiber such as cotton, but which may be important with easily extensible fibers such as wool and rayon.

Paper presented at the February 4th, 1959 meeting of the American Association for Textile Technology, Inc. at New York, N. Y.

Mr. Lund is manager of textile research and development at Courtaulds (Alabama) Inc. A graduate of the University of Leeds, he was in charge of research at James Kenyon & Son, Ltd., before joining Courtaulds at Rochdale, England, in 1950.

G. V. Lund

2. SHRINKAGE DUE TO FIBER AND YARN SWELLING

It is clear that since cotton fibers shrink not more than 2% in wetting, but cotton fabrics may shrink 10% or more, that some other mechanism must operate. This is shown by Collins to be the effect of increase in fiber diameter on wetting.

Cotton fibers increase in diameter some 14% on wetting. If there is no free interfiber space in the yarn, the yarns must increase in diameter by a similar amount. The amount of interfiber space decreases as tension, twist, and lateral compression on the yarn increase, so yarn diameter swelling must increase. Yarns are compressed in cloths of good cover, and the swelling of the yarn in the cloth must be greater than when freed from lateral constraints.

Having established that the diameter of the yarn increases on wetting, Collins goes to show that since the fibers spiral around the yarn, and the yarn increases in diameter on wetting, the yarn must either untwist or contract in length if the fibers are to maintain their original length. Since yarns in fabrics are not allowed to untwist, they must contract in length.

However, a calculation indicates that when a cotton yarn of 3.7 twist multiplier increases in diameter by 14%, it is not likely to shrink more than 2%, a value very much less than those experienced on cotton fabrics. It is therefore apparent that with cotton, yarn shrinkage is not the prime source of fabric shrinkage.

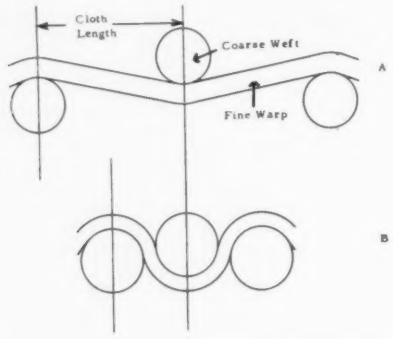


Fig. 1—A geometric explanation of cloth shrinkage (from Collins, "Principles that Govern the Shrinkage of Cotton Goods".)

The main cause of fabric shrinkage from gray to relaxed state is a mechanism of crimp adjustment. As the yarns in warp and filling swell, if the warp and filling threads were to retain their spacings, the yarns would have to increase in length. Force is necessary to do this, and the path of least resistance is taken, the thread spacing decreases, and the fabric shrinks as shown in Figure 1.

3. "FELTING SHRINKAGE" OR "PROGRESSIVE SHRINKAGE" DUE TO MOVEMENT OF INDIVIDUAL FIBERS WITHIN YARNS AND FABRICS

In this discussion, we mean by "felting" a phenomenon in which fibers entangle with each other and pull together into denser areas. Until quite recently, it has been believed that wool is the only fiber which felts, and, because of the economic importance of the fiber, and of this property of the fiber, a large amount of work has been done on the felting of wool over many years.

The general results of this work by many people over a number of years are: Rate of felting is increased by the presence of a directional frictional effect, which makes it possible for the fiber to move or be moved more easily in one direction than in the other. In order for fabrics to felt, the fibers must be easily extensible when wet, and they must have some power of recovery from extension when wet.

Shrinkage of Pure Finished Rayon Fabrics

1. Shrinkage due to relaxation of fiber stresses

Rayon is easily extensible when wet, and, therefore, in commercially finished fabrics, with no chemical stabilization, is prone to shrinkage because of relaxation of imposed dried-in strains on the fibers. With present rayon, this type of shrinkage may only be overcome by reducing processing tensions on the fabric in finishing. Furthermore, it is known that fully relaxed rayon fabrics, because of the low tensile modulus of the fibers, are so easily distorted by low loads as to be useless for all but specialized purposes.

It is clear, therefore, that in order to overcome this difficulty, a fiber is needed with a wet tensile modulus of the same order as cotton, which is known not to suffer from this disadvantage.

2. Shrinkage due to fiber and yarn swelling

This type of shrinkage is perhaps not as embarrassing as the other two types, since, provided that a fabric is not rubbery, and is not prone to further progressive shrinkage of the felting type, fabric constructions and yields may be adjusted accordingly. However, the high degree of diameter swelling of rayon makes the effects of fabric construction on this type of shrinkage particularly great. Two of these effects are shown in Figures 2 and 3.

As would be expected, in a plain weave fabric, the tighter fabrics shrink very much more than the

Fig. 2—The effect of fabric cover factor on fabric laundering shrinkage.

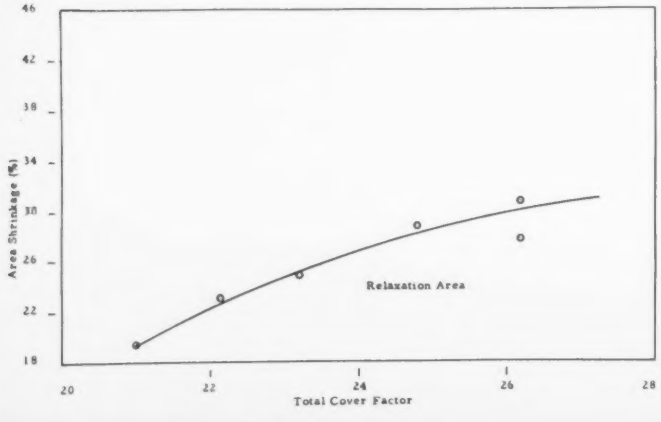
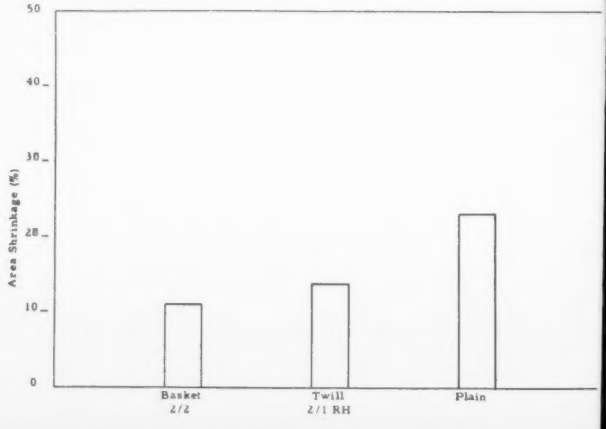


Fig. 3—The effect of weave type (constant texture) upon fabric laundering shrinkage.



slacker fabrics, and, as would be expected, at the same cover factor, weaves with more interlacings shrink more than looser weaves.

So-Called "Progressive Shrinkage"

About three years ago, in the course of a fiber evaluation program, we found that under some washing conditions, the particular types of rayon staple fabric being used exhibited fiber movement, and a type of felting akin to that occurring with wool, in that, after an initial relaxation shrinkage, they continued to shrink and develop a felted appearance. The type of shrinkage behavior is shown in Figure 4, in which rayon and cotton in the same fabric construction are compared.

Although this phenomenon of felting had been noticed previously on rayon fabrics, notably by Hill, Kornreich, and Best-Gordon, we also knew that all rayon fabrics do not behave in this way. Accordingly, a program of investigation was started.

We knew that wool does not felt in the absence of mechanical or hydraulic work on the fabric, and so examined the effect of the load in the 1956 Model Frigidaire Home Washer that was used as a test vehicle. It was immediately apparent that, whereas the fabric was violently agitated when the washer contained only one pound of fabric, it moved relatively gently when the washer contained eight pounds of fabric. Experimental work quickly showed that the high washer load, the fabrics behaved like cotton, in that they suffered an initial relaxation shrinkage during the first wash, and little change in dimensions during the next nine washes. They also showed little change in texture during this process.

At a one pound washer load, however, some of the fabric after an initial relaxation shrinkage, underwent a marked further shrinkage accompanied by the development of a felted appearance.

At this point it occurred to us that the shrinkage at an eight pound load was an approximate measure of the swelling type of shrinkage, and that the additional shrinkage experienced during the severe agitation of the fabric at a one pound load was a felting type of shrinkage akin to that which occurs with wool. We therefore adopted the difference between shrinkage at the two loads as a measure of "felting" or "progressive" shrinkage.

Having developed a method of separating the two types of shrinkage, we proceeded to investigate some of the variables in fabrics, yarns and fibers which might be expected to influence the stability of the fabrics. All our work was carried out on loom state fabrics, so that our results are not complicated by differences in processing tensions on commercial finishing equipment. This procedure does, however, produce relaxation shrinkages which are much higher than are obtained on commercially finished fabrics.

a. The effect of yarn twist and direction

It is illustrated in Figures 5 and 6 that the effect of twist on the felting shrinkage of 1-1/2 denier and 1-9/16" rayon fabrics is very great, when the direction of warp and filling twist is the same, but that the effect of using opposite directions of twist for warp and filling is to render rayon fabrics much less liable to progressive shrinkage on washing with severe agitation. The effect of this is further shown in Figure 7.

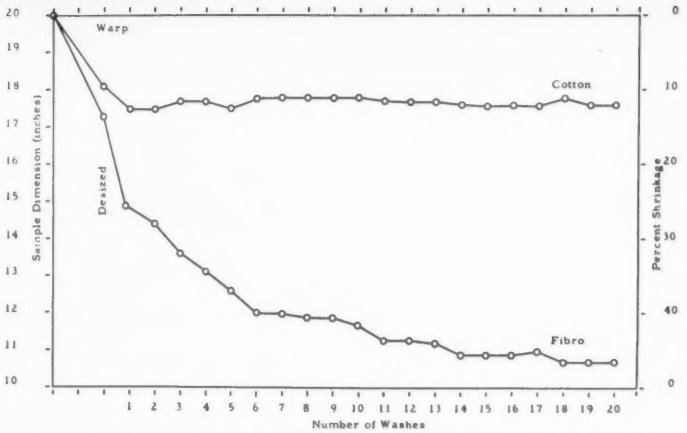


Fig. 4—Laundering shrinkage of cotton and "Fibro" (Frigidaire automatic washer, 140°F., low washer load).

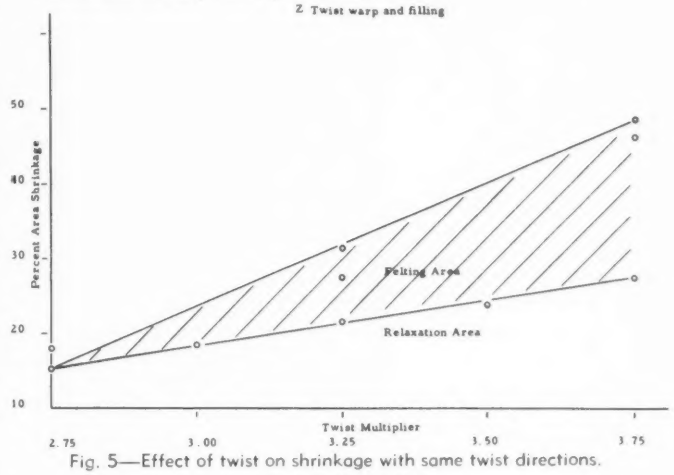


Fig. 5—Effect of twist on shrinkage with same twist directions.

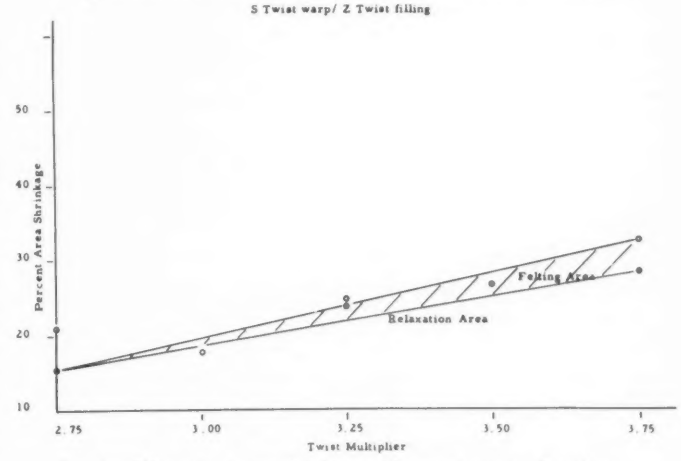


Fig. 6—Effect of twist on shrinkage with opposite twist directions.

Z-3.75/Z-3.75
#45 Ill.

Z-2.75/S-2.75
#6 Ill.

Fig. 7

b. The effect of "cover factor"

Figure 8 illustrates the effect of "total cover factor"* on the shrinkage of 1-1/2 denier 1-9/16" rayon staple at the same twist multiplier.

As with cotton, tight rayon fabrics washed with little agitation shrink more than looser fabrics. However, this is not the path to stable rayon fabrics, since loosely constructed rayon fabrics are subject to very great progressive shrinkage when washed vigorously.

c. The effect of denier and staple length

In Figure 9 are shown the effects of fiber denier and staple length on fabric shrinkage at constant yarn twist and fabric construction. It is apparent

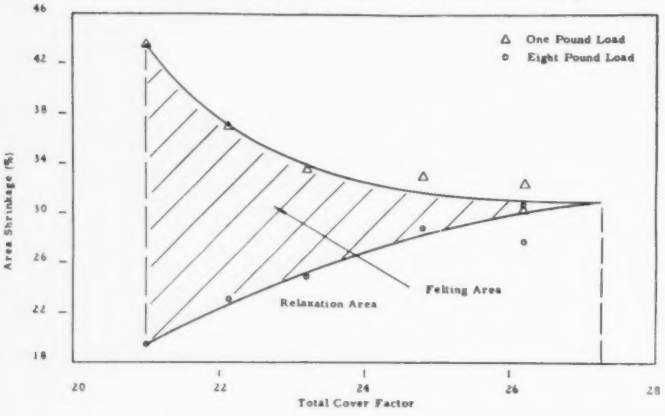


Fig. 8—The effect of fabric cover factor on fabric laundering shrinkage.

that the effect of these variables on the fiber swelling type of shrinkage is quite small. However, decreasing denier and increasing staple length increase the magnitude of the felting type of shrinkage.

This reaction is in agreement with the results of Speakman on wool. Furthermore, since, the force to extend a given fiber a small amount varies with fiber denier, and since ease of extensibility when wet is universally accepted as one of the properties which causes wool to felt, the reaction described in the preceding paragraph suggests strongly that ease of extensibility when wet may be the fiber property which is most important in influencing the progressive shrinkage of fabrics.

Effect of Fiber Properties

At this point in the investigation we felt sufficiently confident of our knowledge of the effects of fabric construction, yarn twist, fiber denier and staple length, to be able to investigate the effects of the properties of a number of experimental, man-made cellulosic fibers on their inherent stability in fabric form. A fabric construction was chosen which, with rayon, would show both fiber swelling shrinkage and felting shrinkage to a marked degree, and similar fabrics were woven from seven experimental fibers. Fiber swelling shrinkage and felting shrinkage were determined as described earlier, and the physical properties of the fibers were examined. Degree of swelling was estimated by measuring the water imbibition of the fibers after wetting and extracting

* Total cover factor $K = \frac{\text{Number of ends per inch}}{\sqrt{\text{Warp yarn cotton count.}}} + \frac{\text{Number of picks per inch}}{\sqrt{\text{Filling yarn cotton count.}}}$

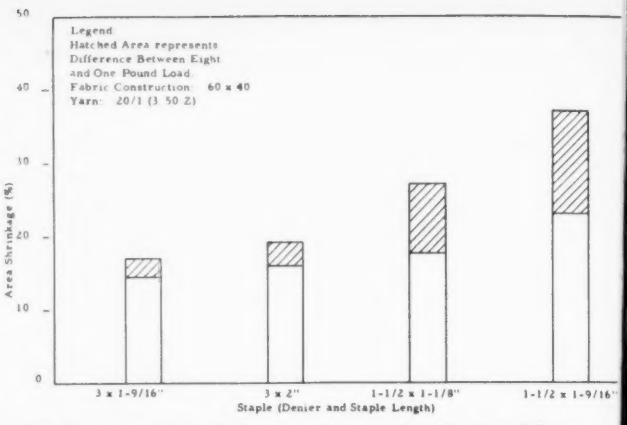


Fig. 9—The effect of denier and staple length upon fabric laundering shrinkage at constant yarn twist and fabric construction.

with an acceleration of 1000g for 5 minutes.

Load/extension curves on the wet fibers were obtained on a Table Model Instron machine, using a 1 inch gauge length and a constant rate of elongation of 60 per cent per minute. The Vibrascope method of denier determination was used for conversion of tensile strength into tenacity. From these load/elongation curves, stress to extend the fibers 5% was determined. As shown in Figure 10, as would be expected, there is a good correlation between the shrinkage which occurs with little agitation and the water imbibition of the fibers, and, as shown by Figure 11, there is a clear and functional relationship between the stress to extend the fibers 5% and the amount of "progressive" or "felting" shrinkage.

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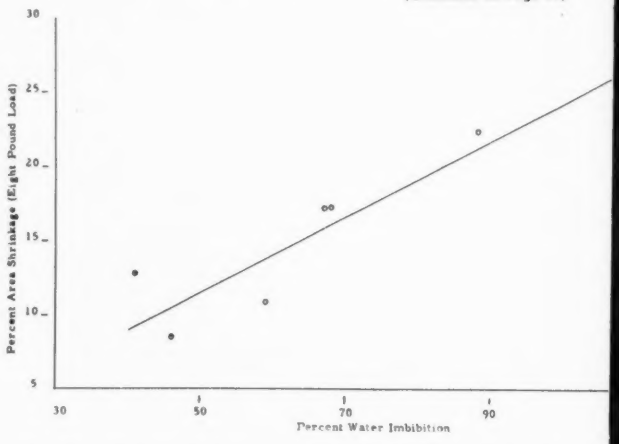


Fig. 10—The effect of fiber swelling upon swelling type fabric shrinkage.

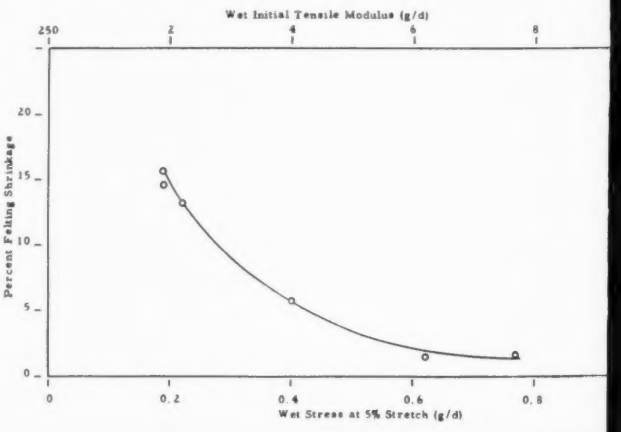


Fig. 11—The relationship between felting shrinkage and ease of fiber extension when wet.

Factors influencing cellulosic fabric shrinkage

By T. R. Scott, Jr.
American Enka Corp.

GARMENTS made of rayon fibers, while quite desirable in many respects, suffer the disadvantage of a high degree of shrinkage during washing unless some sort of a chemical after-treatment is used on the fabric. For this reason, when a study was undertaken to develop means of producing a new cellulosic fiber, it was apparent that improved inherent dimensional stability would be the primary requirement. Consequently, work was undertaken to determine why rayon exhibits the characteristic of progressive shrinkage while cotton, which is another cellulosic, does not. References in the literature suggested that the reasons for this are two-fold: the comparatively low resistance to wet stretch, and the high swelling of rayon. In an attempt to determine which of these properties is more important, and if other properties have an important influence, a series of cellulosic fibers, mostly rayon, having widely differing properties, were spun into yarns and made into fabric.

The following fibers will be discussed in this paper:

1. Toramomen: A high strength rayon staple havlow swelling, high modulus, and a high degree of polymerization. Obtained from Tachikawa Research Institute (Japan).
2. Fiber 109: Introduced on an experimental basis by Du Pont several years ago. This is a modified tire yarn type of fiber which has lower swelling and lower wet modulus than regular nylon staple.
3. Regular rayon staple.
4. Colvadur rayon staple: A high strength, moderate swelling fiber made by Glanzstoff-Courtaulds (Germany).
5. Fiber 500: Experimental designation for a regenerated cellulose fiber of American Enka Corporation. This fiber is characterized by slightly higher strength than regular staple, normal or slightly lower swelling, and appreciably higher wet modulus.
6. Cotton.

Fiber 500 was developed in the laboratories of American Enka Corporation by Dr. C. L. Henry and his co-workers. This product is the result of attempts to produce a fiber with greater resistance to stretch while wet. The swelling, or water imbibition is only slightly less than normal.

The purpose of this investigation was to study the influence of the different physical properties exhibited by the above fibers and to correlate these properties with fabric performance, particularly dimensional stability.

EXPERIMENTAL PROCEDURE

Physical property tests were made on these fibers, with results as shown in Table 1.

Thus, we have a wide range of fiber swelling and wet modulus values under consideration. There is a range of 100% in swelling and almost 500% in resistance to wet stretch, or load required to produce 5% elongation in the wet fiber.

The values given above for the load in grams per denier required to elongate a wet fiber 5% were determined on the Instron. This procedure was chosen because of its degree of reproducibility and because of the difficulty in determining modulus precisely. Five per cent elongation was chosen because this value appears to represent a reasonable amount of stretch which is encountered in processing the fiber through to finished fabric.

The above fibers were spun into 30's single yarn on the cotton system and woven into a fabric characterized as follows:

Plain weave, 76 x 74, 39.2 in. O.L., 3.6 oz./yd., 30/1 warp and filling.

All of the fabrics were plain finished and part were Sanforized and part resin-treated.

Because of the presence of pectins, waxes, etc., which must be removed from the cotton during finishing, the following procedure was used in finishing fabrics made from this fiber:

Cotton:

Singed
Desized, 0.75% solution sulfuric acid, aged 30 minutes at room temperature
Steeped, 120° F. 3% sodium hydroxide, steamed one hour at 212° F., washed 180° F.
Bleached, 1% hydrogen peroxide and 1% silicate of soda, steamed one hour at 212° F., washed at 120° F., cold rinse.
Dried

Mr. Scott is head of the textile development section, Textile Research Department, of American Enka Corp.

He was graduated from the University of South Carolina with a B.S. degree in chemical engineering and is a registered professional engineer. Since joining American Enka, Mr. Scott has worked successively in the rayon pilot plant, applied chemical research section, and textile research department.

T. R. Scott, Jr.

Paper presented at the February 4th, 1959 meeting of the American Association for Textile Technology, Inc. at New York, N. Y.

TABLE I. PHYSICAL PROPERTIES OF FIBERS

Fiber	Denier	Conditioned		Wet		Swelling q, %	Load at 5% Elong., g/d (wet)
		Strength g/d	Elong. %	Strength g/d	Elong. %		
Toramomen	1.49	3.45	11.5	2.87	17.8	49	0.903
Fiber 109	1.51	3.80	30.1	2.88	33.0	61	0.151
Regular Rayon	1.50	2.89	21.2	1.58	28.7	83	0.190
Colvadur	1.21	4.14	18.9	2.90	25.6	63	0.225
Fiber 500	1.41	3.21	10.4	1.86	13.0	66	0.493
Cotton	1.98	2.66	8.6	3.04	11.0	40	0.607

"q" values determined on yarns removed from plain finished fabrics.

Vat-dyed on continuous range. This fabric was designated "plain finished". A part of the remainder was Sanforized and part resin-treated.
All remaining fabrics were prepared as follows:

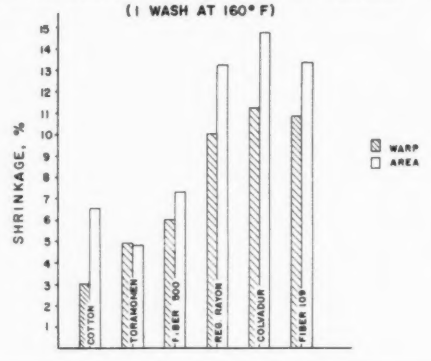
Synthetics System:

Singed
Desized: 1% Excise T Conc., aged 1-2 hours
Boil-off: Continuous boil-off on Hinnekens machine, dried relaxed
Vat-dyed on continuous range

Retention of dimensions of plain-finished fabric after repeated washings in a Hotpoint home laundry machine at 160° F. followed by tumble drying in a Hotpoint home dryer at "Medium" setting are given in Table 2. (Fabrics were drip-dried and flat-bed pressed before each measurement for shrinkage.)

It is of interest to examine the above shrinkage figures with respect to relaxation shrinkage, which occurs during the first wash, and progressive shrinkage, which takes place during subsequent washings. Relaxation shrinkage is shown in Figure 1.

FIG. 1. RELAXATION SHRINKAGE OF FABRICS
(1 WASH AT 160° F)



It is seen that the Fiber 500 has twice as much warp shrinkage as the cotton, but, when area shrinkages are compared, the Fiber 500 is only one percentage point greater. This is due to the lower shrinkage of Fiber 500 in filling. Toramomen is in-

TABLE 2. RETENTION OF DIMENSIONS AFTER REPEATED WASHINGS AT 160°F

	Toramomen	Fiber 109	Regular Rayon	Colvadur	Fiber 500	Cotton
1 Washing						
Warp	95.1	89.2	90.0	88.8	94.0	97.0
Filling	100.1	97.2	96.4	95.9	98.6	96.8
Area	95.2	86.7	86.8	85.3	92.7	93.5
5 Washings						
Warp	93.8	85.6	87.3	85.3	92.7	95.8
Filling	100.2	94.8	95.5	94.1	98.7	96.6
Area	94.1	81.1	83.4	80.2	91.6	92.5
10 Washings						
Warp	93.1	81.4	86.0	84.3	92.8	95.4
Filling	100.1	91.3	95.0	92.8	99.6	97.4
Area	93.2	74.4	81.8	78.2	92.5	92.9
50 Washings						
Warp	93.6	71.8	84.4	79.2	92.6	94.7
Filling	101.1	83.0	95.6	89.8	101.3	99.2
Area	94.6	59.5	80.6	71.1	93.9	94.0

termediate in shrinkage between cotton and Fiber 500, while the three remaining fabrics have considerably more shrinkage than the Fiber 500.

It should be remembered that these are plain-finished fabrics on which no mechanical or chemical treatment has been used to reduce shrinkage.

It has been postulated that the high shrinkage of rayon compared with cotton is due primarily to the low resistance to wet stretch and high swelling of rayon. Purportedly, the combination of excessive fabric stretching during processing, particularly wet finishing, and high fiber swelling leave the fabric in such a state that all the potential shrinkage cannot be removed in the first wash and therefore progressive shrinkage is encountered.

Let us now examine the swelling ("q" or water imbibition) of yarns removed from the plain-finished fabric. In subsequent discussion, reference to swelling will always mean water imbibition of yarns or fiber completely wet out, subjected to a centrifugal force of approximately 1000 g's for 15 minutes in a saturated atmosphere, weighed, dried, and reweighed. The reported values are calculated as follows:

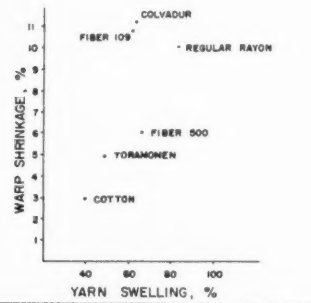
$$q = \frac{\text{centrifuged swollen weight—dry weight}}{\text{dry weight}}$$

Bone dry rather than conditioned yarn weights are used.

Yarn swelling rather than fiber swelling is reported, because as cellulosic fibers are repeatedly wet-out and dried, the swelling decreases. This effect is appreciable in the beginning, but diminishes rapidly. It is thought that swelling of yarns in the plain-finished fabric should have a greater influence on subsequent fabric performance than the swelling of individual fibers.

Figure 2 shows yarn swelling plotted against relaxation shrinkage in the warp direction.

FIG. 2. RELAXATION WARP SHRINKAGE vs. YARN SWELLING



When relaxation shrinkage of the first three fabrics—cotton, Toramomen, and Fiber 500—are compared, there appears to be a relationship between yarn swelling and relaxation shrinkage. With the three fabrics which show highest shrinkages, however, this relationship appears no longer valid. This suggests that other properties are important in controlling relaxation shrinkage. This property may be resistance to wet stretch and will be discussed later on.

Progressive warp and area shrinkages are shown in Tables 3 and 4. Table 3 shows incremental shrinkage for washes 1-5, 5-10, and 10-50. Cumulative changes for these intervals are given in Table 4. Cumulative warp shrinkages are plotted in Figure 3.

TABLE 3. INCREMENTAL PROGRESSIVE SHRINKAGE
(Per Cent)

Fiber	Washes 1-5		Washes 5-10		Washes 10-50	
	Warp	Area	Warp	Area	Warp	Area
Cotton	1.2	1.0	0.4	0	0.8	0
Toramomen	1.3	1.1	0.7	0.8	0.4	0
Fiber 500	1.3	1.1	0	0	0.2	0
Regular Rayon	2.7	2.4	1.3	1.6	1.5	2.1
Colvadur	3.5	5.3	1.0	2.0	5.1	7.1
Fiber 109	3.6	5.6	4.2	6.7	9.5	13.4

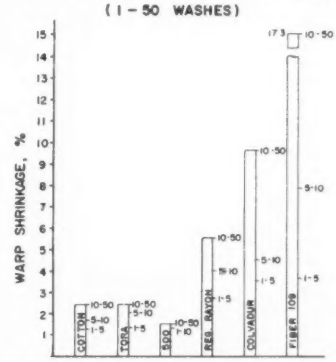
TABLE 4. CUMULATIVE PROGRESSIVE SHRINKAGE
(Per Cent)

Fiber	Washes 1-5		Washes 1-10		Washes 1-50	
	Warp	Area	Warp	Area	Warp	Area
Cotton	1.2	1.0	1.6	0.6	2.4	—0.5
Toramomen	1.3	1.1	2.0	2.0	2.4	0.6
Fiber 500	1.3	1.1	1.3	0.2	1.5	—1.2
Regular Rayon	2.7	2.4	4.0	5.0	5.5	6.2
Colvadur	3.5	5.3	4.5	7.3	9.6	14.4
Fiber 109	3.6	5.6	7.8	12.3	17.3	27.2

— denotes growth.

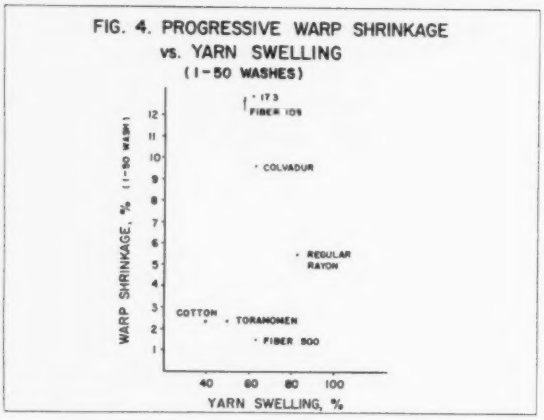
Cotton and Toramomen, which had less relaxation shrinkage than the Fiber 500, both have slightly higher progressive shrinkage in these particular fabrics. The remaining three fabrics show high progressive shrinkage; they also exhibited high relaxation shrinkage.

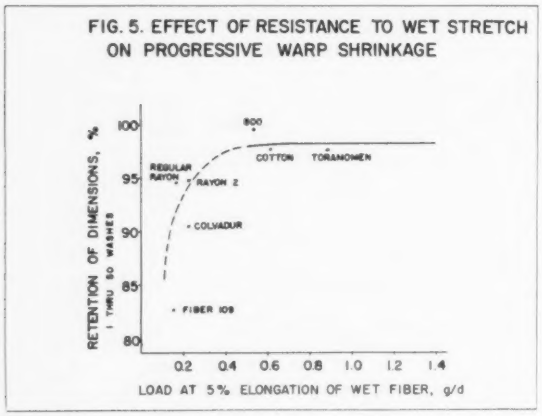
FIG. 3. PROGRESSIVE WARP SHRINKAGE
(1 - 50 WASHES)



Examination of Figure 4, were yarn swelling (q) is plotted against progressive warp shrinkage after 50 washes, does not suggest any relationship between swelling and progressive shrinkage.

Since swelling does not appear to have any appreciable effect on progressive shrinkage, let us now examine this property as a function of resistance to stretch of the wet fiber. Results are shown on the curve in Figure 5.





The "Rayon 2" shown in Figure 5 is a fiber produced in this country which has somewhat higher strength than regular rayon.

There appears to be a relationship between progressive shrinkage and the load required to elongate the wet fibers 5%. The curve (Fig. 5) suggests that, after a certain level of resistance to wet stretch is attained, progressive shrinkage is virtually eliminated. It is further suggested that this level is at about 0.5 grams per denier, or at least fabrics made from cellulosic fibers of this value, or higher, do not exhibit progressive shrinkage.

From the foregoing, it appears that wet fiber modulus, or resistance to stretch of the wet fiber, is the controlling factor with regard to progressive warp shrinkage in fabric and that the influence of fiber swelling on progressive shrinkage is small.

So far, this discussion has emphasized fabric shrinkage in the warp direction. Total fabric, or area, shrinkage should also be considered since the influence of resistance to stretch of the wet fiber and particularly of swelling should be made evident in this property. With this thought in mind, let us now examine Figure 6, where total fabric area shrinkage (relaxation and progressive) is plotted against yarn swelling.

From Figure 6, it appears that dimensional stability of a fabric after repeated washing is not dependent upon fiber swelling.

The influence of resistance to wet stretch of the fiber upon total fabric shrinkage is shown in Figure 7.

From Figure 7, it is evident that dimensional stability of a fabric is controlled to a very great extent by the resistance to stretch of the component fiber while wet.

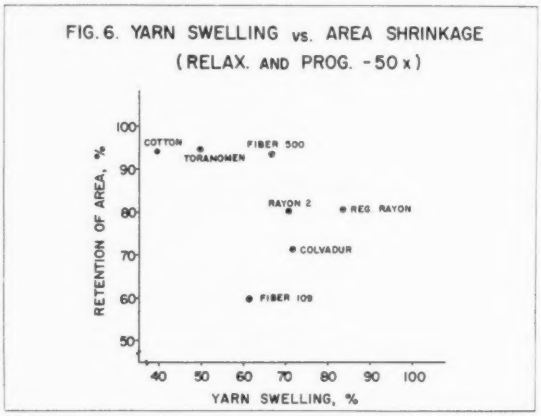
Up to this point, the data have indicated that resistance of the fiber to wet stretch has a large influence in the control of fabric shrinkage, both relaxation and progressive. It has also been demonstrated that fabrics made from fibers which require a load of 0.5 grams per denier or higher to produce an extension of 5% while wet exhibit no appreciable progressive shrinkage.

The data also suggest that fiber swelling may influence shrinkage encountered during the first wash, but it has been shown that the influence of swelling on shrinkage after repeated laundering is small.

Sanforization

From the foregoing, it would be expected that the three cellulosic fabrics in which most of the potential shrinkage is removed during the first wash should be amenable to stabilization by a mechanical compressive shrinkage procedure. Fabrics made from two of these three fibers—cotton and Fiber 500—have been so treated, along with regular rayon. Results are given in Table 5. Data are not available on Toramomen.

It is seen, from the results of the first wash, that some of the fabrics did not receive optimum compressive shrinkage; one fabric was over-compressed and one was under-compressed. The important point to note, however, is the change in warp dimensions after the first wash. Cotton and Fiber 500 showed less than 1% additional shrinkage after the rather drastic test of five washes at 212°F. Regular rayon had 3% shrinkage under these conditions. As a re-



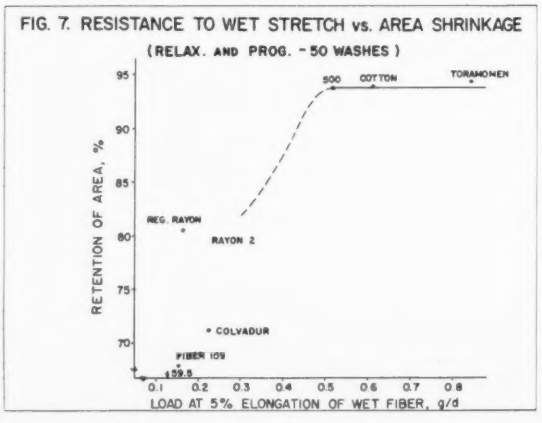


TABLE 5. DIMENSIONAL STABILITY OF FABRICS AFTER SANFORIZING

Fabric	Change in Warp Dimension, per cent					Net Change 1-5, %
	Wash 1	Wash 2	Wash 3	Wash 4	Wash 5	
Cotton	+0.2	+0.1	−0.2	−0.4	−0.6	−0.8
Fiber 500	−1.5	−1.6	−2.1	−2.2	−2.4	−0.9
Rayon	+4.5	+3.5	+2.1	+1.9	+1.5	−3.0

(All washes at the boil—212°F.)

sult of the above, even though optimum mechanical compression conditions were not obtained, it appears reasonable to state that fabrics made of Fiber 500 show satisfactory dimensional stability after Sanforization.

Fabric Durability

Neither laboratory abrasion nor garment wear tests have been completed on these fabrics. With regard to fabric durability, however, it can be said that all fabrics have withstood repeated launderings up to 50 without evidence of damage. While this does not rank the fibers in order of serviceability, it does perhaps suggest that those fabrics which do not exhibit excessive shrinkage would perform satisfactorily in service.

Resin Treatment

Properties of fabrics after treatment with DMEU resin are given in Table 6.

TABLE 6. PHYSICAL PROPERTIES OF FABRICS AFTER RESIN TREATMENT

Fabric	Resin Add-on, %	Crease Recovery[1], % (W+F/2)	Tensile Strength[2], lbs. (W+F/2)		Tear Strength[3], lbs. (W+F/2)
			Dry	Wet	
Toramomen	11	77	55	36	4.4
Fiber 109	11	72	54	41	7.2
Reg. Rayon	11	64	43	27	4.3
Fiber 500	11	75	55	37	4.7
Fiber 500	5.5	63	50	34	5.2
Cotton	5.5	60	32	29	1.8

[1] Monsanto Method, ASTM D1295-531, measured after 10th wash.
[2] One-inch ravel strip method, ASTM D39-49.
[3] Trapezoid Method, ASTM D39-49.

A resin wash and wear formulation typical for cotton was used at two levels of resin add-on—11% for Toramomen, Fiber 109, Rayon, and Fiber 500; 5.5% for cotton and Fiber 500. In wash and wear finishing of fabrics, it is customary for finishers to use about twice as much resin add-on for rayon as for cotton. Greater add-ons for cotton are not possible because of greatly reduced fabric tensile and tear strengths with increasing amounts of resin. Wash and wear properties of cotton, however, are as good at this level of add-on as regular rayon with higher add-on.

Although wash and wear ratings of fabrics are not yet available, a comparison of crease recovery values can be made. While crease recovery is not necessarily a measure of wash and wear characteristics of a fabric, these values do give some indication of what may be expected; higher crease recovery indicates better wash and wear properties. At the same level of resin application, the Fiber 500 has as good crease recovery as cotton and is equivalent to that of regular rayon with a higher level of treatment. With the same resin add-on as rayon, the crease recovery is somewhat higher than either rayon or cotton. It is interesting to note that the higher crease recovery obtained with a greater amount of resin does not result in lower fabric strength. To the contrary, tensile strengths, wet and dry, of the fabric made from Fiber 500 are higher, while tear strength is reduced only slightly and remains well above the minimum level.

Thus it might be said that fabrics made of Fiber 500 have the desired properties of both cotton and rayon in resin treatment, and do not exhibit the undesirable properties of either. Specifically, regular rayon generally has increased wet strength after resin treatment but does not attain a satisfactory level of crease recovery unless approximately twice as much resin add-on is used as for cotton. Cotton, on the other hand, shows good crease recovery values at low levels of resin application but tensile and tear strengths are greatly reduced. If attempts are made to further increase the crease recovery of cotton by using the amount of resin ordinarily used for rayon, tensile and tear strengths are usually reduced to an unsatisfactory level. Fiber 500, in contrast, has equal crease recovery with cotton at the same level of resin application. Higher crease recovery values are obtained with increased resin application, accompanied by higher tensile strengths and only a slight reduction in tear strength.

SUMMARY

It has been shown that swelling and resistance of the fiber to stretch while wet are not equally important in their influence on dimensional stability of fabrics made from cellulosic fibers. While swelling may exert a minor influence, the controlling factor is resistance to wet stretch, and, if this value lies above a certain level, no appreciable progressive shrinkage is encountered.

It has also been shown that fabrics with a highly satisfactory degree of fabric stability to washing have been produced from two regenerated cellulose fibers—Toramomen and Enka Experimental Fiber 500. Shrinkage control has been obtained by Sanforizing only; it was not necesary to use resin to impart dimensional stability.

If the use of resins is desired to improve crease recovery, as in wash and wear fabrics, Fiber 500 exhibits some rather unusual properties. Crease recovery values similar to cotton are obtained at the same level of resin add-on. At the higher level of resin used for rayon, Fiber 500 has better crease recovery than either cotton or rayon. Tensile and tear strengths are at a rather high level after treatment.

A method of predicting shrinkage of fabrics made from cellulosic fibers is suggested from these data. This involves making a stress-strain curve for the wet fiber and determining the stress required to produce 5% strain. If this value is 0.5 grams per denier or higher, fabrics made from the fiber should show no appreciable progressive shrinkage and relaxation shrinkage can be satisfactorily removed by a mechanical compressive shrinkage procedure. ■

High wet modulus fiber fabrics

By Graeme G. Whytlaw
AMERICAN VISCOSE CORP.

THE TWO PREVIOUS PAPERS have developed the theory and possibilities of a high modulus synthetic cellulosic fiber. The American Viscose Corp.'s part of this presentation is to demonstrate the practical results achieved in fabrics made from such a fiber, which we have tentatively named Fiber 40. We feel sure you will see that we have here a fiber of different characteristics than anything that you have ever seen before.

The stress/strain curves of Fiber 40, cotton, and rayon as shown in Fig. 1 are essentially the same as those described in the preceeding two papers. The conditioned stress/strain curve of Fiber 40 is very close to that of cotton and quite unlike that of rayon. Anticipating a question as to how we arrive at the curve of cotton, its stress/strain measurements were made on very short lengths due to the extreme variation in strength along the length of cotton fibers, and as such show a higher strength level than found when testing long lengths, such as, 1/2" as against 1/16". This method of testing more nearly represents stress/strain properties as found in cotton yarn and fabric. Single fiber tests on cotton at the longer length are about 1/3 lower in strength.

In Fig. 2, the wet modulus of the new cellulosic, represented by Fiber 40, is again more nearly like cotton and quite different from rayon.

It has been the practice over the years for us, and many of our customers, to initially evaluate a fiber by spinning it into a 30/1 yarn and weaving a 68 x 62 challis. This type of fabric was made from Fiber 40 along with a control fabric of rayon. The gray fabrics were singed, desized, scoured, relaxed dried and steam framed. A portion of the fabric from Fiber 40 was Sanforized at Joseph Bancroft and Sons in Wilmington, Delaware. The samples were then given 20 commercial launderings in a reversing wash wheel, using the white wash formulation.

Table I reveals that the regular standard rayon showed progressive shrinkage as is normal and well known. The plain finished Fiber 40 acted as would cotton that had not been Sanforized, while the Sanforized Fiber 40 challis showed excellent stabilization. While the texture of Fiber 40 in the Sanforized state remained almost identical throughout the entire washing cycle, the texture of the plain finished rayon became more dense as the washing progressed. The pick count increased somewhat on the plain finished Fiber 40 fabric as you would expect from the 5% warp shrinkage.

A print cloth has been made and part of it was printed at Bancroft's Eddystone, Pa., plant and subsequently Sanforized at their Wilmington plant. This fabric shows less than 1% shrinkage. A portion of this fabric has also been resin treated for wash and wear and shows a rating of 3½. We realize this is a little low. However, this was our initial effort and we expect better results on our next trial.

Plissé is not effective on rayon fabric unless it is first chemically stabilized. Some of the challis was singed, desized, scoured, and frame dried and then taken to Sayles Finishing Co., Saylesville, R. I. where it was vat dyed and plisséd. The resultant fabric in appearance and shrinkage, less than 3%, is very satisfactory. We plan to make a lighter weight construction, such as is now prevalent in the trade, so that a complete evaluation may be made.

Rayon gabardine in shirting fabrics left much to be desired as it was necessary to add a considerable amount of resin to achieve stability. The control of that amount of resin presents real problems, and many gabardines were literally ruined. All of this left a bad taste in mouths of the converter and cutter and more especially, the consumer.

Believing that a Fiber 40 gabardine could be readily stabilized by mechanical compressional methods and that the resultant fabric would find a ready interest in the market, one of our customers in collaboration with us, produced three gabardine fabrics; one of rayon, another of Fiber 40, and a third of cotton. The construction of the gabardine was 123 ends and 60 picks. All fabrics were singed in the greige, desized, scoured, vat dyed, dried, and Sanforized at North Carolina Finishing Co., Salisbury, N. C. The samples were then given 15 consecutive washings as described in the cotton wash procedure CCC-T-191a.

The shrinkage results (Table II) of these fabrics show how the Sanforized gabardine made of Fiber 40 maintained through the 15 washings a very satisfactory stability.

Visual inspection of the three fabrics after the 15 washings mentioned above revealed the following: The raveling of the cotton and the Fiber 40 fabric appeared to be the same and nowhere near as great as the rayon gabardine. The Fiber 40 fabric showed no rolling at the edge as did the rayon gabardine. Thus we believe, first, that seam failure due to fraying will not be a problem; second, that rolled fabric alongside the seam, which is a nuisance in pressing a plain finished rayon, is eliminated in a Fiber 40 fabric.

Paper presented at the February 4th, 1959 meeting of the American Association for Textile Technology, Inc. at New York, N. Y.

Graeme G. Whytlaw

Mr. Whytlaw is manager of technical sales development, in the Technical and Textile Service Department of American Viscose Corp. A graduate of Harvard with a B.S. degree, Mr. Whytlaw has been active in the textile industry since 1920. He joined American Viscose Corp. in 1938 as office manager in Providence, R. I.

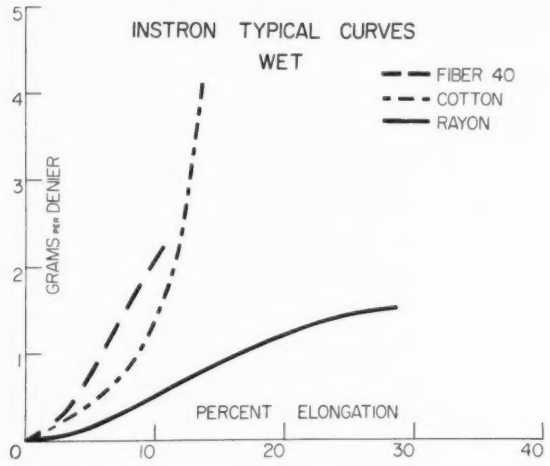


Fig. 1

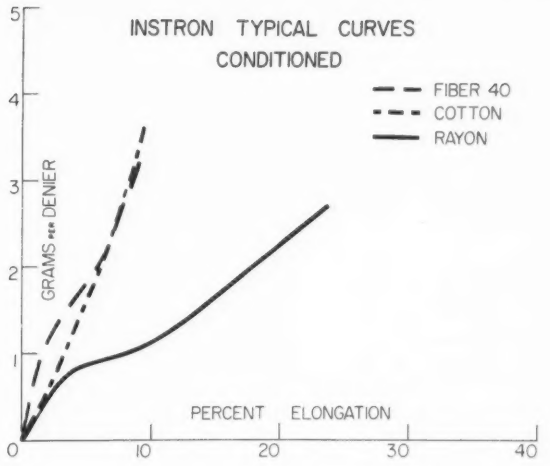


Fig. 2

TABLE I

SHRINKAGE RESULTS

	Plain Finish Rayon		Plain Finish Fiber 40		Sanforized Fiber 40	
	Warp	Filling	Warp	Filling	Warp	Filling
1st Wash	8.50%	3.89%	4.00%	0.67%	0.39%	+0.44%
2nd Wash	11.78%	4.89%	5.44%	1.22%	0	+1.39%
3rd Wash	10.56%	4.17%	5.00%	0	0.67%	+1.00%
4th Wash	11.94%	4.44%	5.44%	0.56%	0.67%	+1.94%
5th Wash	11.11%	3.33%	5.00%	0.28%	1.22%	+1.28%
10th Wash	12.61%	4.06%	5.44%	0.17%	0.83%	+2.22%
20th wash	11.56%	2.33%	5.28%	0	0.67%	+2.50%

TEXTURE

Before Washing	79	66	79	67	80	70
After 20th Wash	80	76	79	70	79	70

TABLE II

GABARDINE—SANFORIZED

SHRINKAGE RESULTS

	Rayon Gabardine		Fiber 40 Gabardine		Cotton Gabardine	
	Warp	Filling	Warp	Filling	Warp	Filling
1st Wash	4.7%	+1.0%	1.1%	+1.0%	1.1%	0.6%
2nd Wash	5.0%	+1.0%	1.1%	+1.3%	1.1%	0.6%
3rd Wash	5.8%	+1.0%	1.4%	+1.0%	1.1%	0.6%
4th Wash	5.6%	+1.3%	1.4%	+1.0%	1.1%	0.6%
5th Wash	6.1%	+1.0%	1.4%	+1.0%	1.7%	0.6%
10th Wash	7.2%	+0.7%	1.9%	+1.0%	2.2%	1.2%
15th Wash	9.7%	0	1.9%	+1.3%	2.2%	0.9%

PICK COUNT

	After Sanforizing	After Wash Test
Rayon	69	73
Fiber 40	64	65
Cotton	65	65

One set of laboratory tests have been run to compare the effect of mercerization on rayon, Fiber 40, and cotton fabrics of identical construction. The results are shown in Table III.

TABLE III. MERCERIZATION TRIALS
DRY TENSILE STRENGTH

	Rayon	Fiber 40	Cotton
Original	53.7	54.2	56.8
40° twd. caustic	34.7	48.0	58.2
45° twd. caustic	36.9	47.6	58.1
50° twd. caustic	36.9	47.2	57.6
55° twd. caustic	37.3	49.3	58.8

It is well known that rayon is severely damaged by mercerization to the extent of 30 to 35%, but we see in Table III the loss by Fiber 40 is in the range of 9 to 13%. Cotton, of course, increases slightly in strength. Further work is under way to check these results in full scale commercial trials both on 100% Fiber 40 fabric and in blends with cotton.

We believe, and tests are under way to prove it, that Fiber 40 will be stable in drapery warps, which has not been the case with rayon. The well known "elevator effect" where the drapery lengthens or shortens due to humidity conditions should no longer exist with this type of fiber in the warp.

It would not be fair to leave the impression that our work has been confined solely to 100% Fiber 40 fabrics. With today's emphasis on blends of two or more fibers to obtain the best qualities in the finished goods, we have of course made some blends; but not all the returns are in for us to report. However, we have made a shirting batiste of 65% Dacron/35% Fiber 40 and compared it with a 65% Dacron/35% rayon. Both were woven of 50/1 yarn in a 90 x 74 construction. The Fiber 40 blend came off the loom 48″ wide. When heat-set at Hellwig Dyeing Corp. in Philadelphia it came in to a normal 45″, scoured to 44″, and was subsequently framed to 45″. Better Fabrics Testing Bureau reports that after ten washings it showed a warp shrinkage of 1% and filling shrinkage of 0%, and a wash and wear rating of 4.

Now the rayon blend could only be framed to 41¼″ and after five washings showed a 3% warp shrinkage and 1% filling shrinkage. In this case we have a Dacron/Fiber 40 fabric which is satisfactory with heat-setting alone and advantageous not only over the rayon blend but over a cotton blend too, for neither mercerizing nor Sanforizing is necessary.

A 75% Fiber 40-25% nylon, vat dyed, work clothing with resin application has a wash and wear rating of 4. Initial shrinkage results are within 1½%.

An 80 square fabric has been made of 2/3 cotton, 1/3 Fiber 40 and finished with a wash and wear formulation. The resin add-on is approximately 5% solids. This fabric has a filling tensile of 34 pounds, with a total crease angle of 265°, and a wash and wear rating of 4 after five laundering cycles. The shrinkage of this fabric is less than 1%.

A large number of fabrics and nonwovens are under way or planned in the industrial field, but the end use testing of such materials takes some time. We are confident, however, that many of them will be successful.

Fiber 40 may be dyed satisfactorily with any of the dyestuffs now currently used on cotton or rayon. Dyeings have been made using direct colors, vat colors, and reactive dyes which indicate that Fiber 40 dyes somewhat slower than rayon and approximately at the same rate as cotton.

Fiber 40 as compared with rayon is apt to be selective; therefore, in shade matching it should not be taken for granted that in a compound dyeing similar tones will be obtained as on rayon. For example, in 1% dyeing, Superlitefast Gray LVL dyes Fiber 40 darker and duller than rayon; Chlorantine Green 5GLL, Pr. 616, dyes Fiber 40 darker and brighter than rayon; Solophenyl Fast Blue Green BL and Solantine Red 8BLN, Pr. 246, both dye Fiber 40 lighter than rayon. The shades are as a general rule somewhat duller than those obtained on rayon. We have found, however, that the lightfastness and washfastness are improved over rayon to a noticeable degree.

This type of fiber discussed in these papers shows that alone, or in blends with other fibers, it offers unique advantages to the textile manufacturer and the finisher. With the aid of the textile industry, handsome fabrics in attractive luster, color, hand and drape, along with stability and utility, can be made which will more than satisfy the ultimate consumer and make her want to come back for more.

Discussion

Following the presentation of the prepared papers, there was a question-and-answer period during which the speakers answered questions from the audience. Dr. John Dillon, president of the Textile Research Institute, was moderator. Below is a summary of some of the questions submitted and the answers.

C. W. BENDIGO (Werner Textile Consultants): Data given seemed to be for staple fiber. What about continuous filament?

LUND: We don't as yet know. But I would expect that high modulus fibers in filament constructions would yield less sleazy, more attractive fabrics.

SCOTT: While our work in filament yarns hasn't progressed to the extent of our work in staple, we have made a high modulus filament cellulosic yarn. In a Sanforized pigment taffeta construction, we found less than 1% shrinkage after 50 washes at 160°F.

ARNOLD SOOKNE (Harris Research Laboratories): Do rayon fabrics really show felting shrinkage?

LUND: Within our own organization there are many who believe that it would be better to talk about "progressive shrinkage", and that is why I have used the two terms together.

FRANZ HAUSNER (Spring City Knitting Co.): Are there any studies yet on these fibers in knit cloth?

LUND: With our fiber SM-27, we have made knit fabrics using yarns spun from 1½ denier fiber. Stability roughly equivalent to similar fabrics knit from cotton has been achieved.

SOOKNE: Fiber 40 has a rather low ultimate elongation. Does it exhibit brittleness like some highly oriented cellulosic fibers?

WHYTLAW: We are not finding at present a high degree of it. We don't find fibrilation.

HOLGER THUEMMEL (Allied Chemical Corp.): Can these fibers be solution-dyed.

LUND: Technically, there is no reason why not.

Knitting Show

(Continued from Page 48)

TRICOMA, INC.
NEW YORK, N. Y.—(178, 179, 184, 185)

EXHIBIT: Two models, circular rib and flat, jacquard machines by Lebocey Machines of France; a Tricoma Model F 8 fully automatic single lock flat power machine by Alemania-Seyfert & Donner of West Germany; a Jacquard hosiery and a derby rib hosiery machine by Moncenisio of Italy; and a single thread looper for outerwear by Hilber & Co. of West Germany.

IN ATTENDANCE: Walter W. Glocer, C. E. Weinberg, E. Just, U. Glocer, F. Gariboldi, J. Mignot, R. Friedl, H. Neuber.

TUBULAR TEXTILE MACHINERY CORP.
WOODSIDE, L. I., N. Y.—(165-169)

EXHIBIT: Their electronic Framer and Steamer and their Reelax-Jet Dryer; equipment for wet processing, drying and steam finishing of circular knits will be illustrated, also fabrics processed on their machines; previews of equipment in the development stage.

IN ATTENDANCE: Eugene Cohn, Don Foreman, Lee Rothenberg, Jr., John Sasson, Gene LoBell, Frank Allshouse, Edward Goodman, Mathew Barbiasz, Eugene Weeden.

TURBO MACHINE CO.
LANSDALE, PA.—(90-93, 91A, 92A)

EXHIBIT: The new Turbo Dye Border will be in operation.

IN ATTENDANCE: W. K. Wyatt, E. J. Berger, Albert Bagian, Edward G. Hughes, DeHaven Butterworth, Jr., J. L. Lohrke, Jr., Peter Coker, John Brownell, William Koehlert, John Stafford, Howard West Grant Brewin.

TWISTEX COMPANY, INC.
NEW YORK, N. Y.—(17)

TWITCHELL, INC., E. W.
PHILADELPHIA, PA.—(143, 144)

EXHIBIT: Presentation of modern packaging ideas.

IN ATTENDANCE: J. B. Holland, J. P. Wark, B. J. Vetrone, R. H. Therrell, B. Weingard, N. Sullivan, J. Junod, R. Allen, Mrs. Alice Meisenheimer.

UNION CARBIDE CHEMICALS CO.
NEW YORK, N. Y.—(434, 435)

EXHIBIT: The display will feature the versatility of Dynel fiber for use in a variety of specialized knitted fabrics.

IN ATTENDANCE: A. L. Snyder, J. S. McGilly, W. T. Burgin, C. A. Strodle, H. S. Porter, T. P. Mulligan.

UNION SPECIAL MACHINE CO.
CHICAGO, ILL.—(457-460, 479-482)

EXHIBIT: Greatly enlarged line of industrial sewing machines, including their bobbinless zig-zag stitch machines, overedging tacking machines, and many others.

IN ATTENDANCE: T. S. Whitsel, M. C. Moulton, L. M. Brown, A. J. Feigel, M. M. Ambrose, W. G. Booth, W. E. Palm, C. L. Rosenquist, E. S. Rockney, B. W. Merz, J. R. Haderly, D. M. Bender, E. W. Bennett, L. D. Cassell, R. B. Foster, C. D. Mairs, E. M. Nusbickel, H. T. Powell, B. F. Saganowich, R. L. Smith, T. J. Traylor, R. S. Vogt, E. W. White, W. D. Harrod.

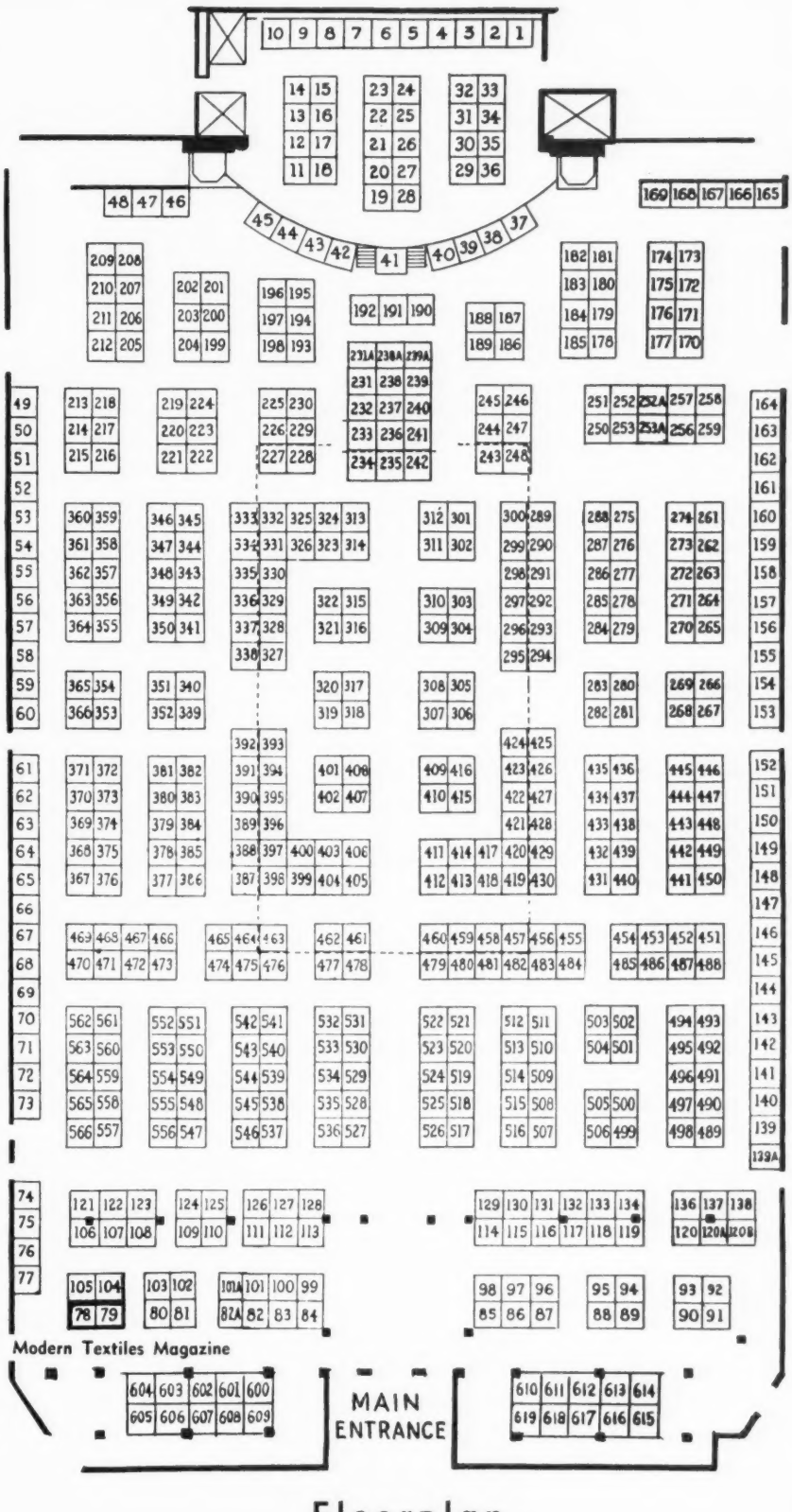
UNITED ELASTIC CORP.
EASTHAMPTON, MASS.—(419, 420, 429, 430)

EXHIBIT: Elastic webbing and braid for every purpose; new styles and constructions for leotards; Waffle Knit Thermal fabric for various uses.

IN ATTENDANCE: R. A. Waite, W. E. Dalby, E. R. Boehm, E. E. Cadwell, P. M. McIntosh, D. B. Cameron, F. L. Dorr, G. B. Weidhaas, H. O. Hollingworth, Clark Lilley, Sidney Tingen, Esmond Thompson, W. F. Kelsey.

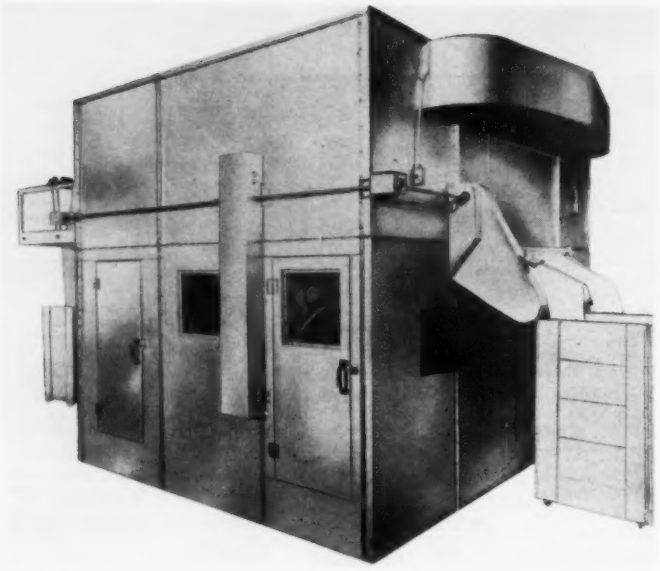
U. S. BLIND STITCH MACHINE CORP.
NEW YORK, N. Y.—(441, 442, 449, 450)

UNITED STATES HOSIERY CORP.
NEW YORK, N. Y.—(461, 462)



Floorplan

of 44th Knitting Arts Exhibition



Tube-Tex Reelax-Jet Dryer

UNITED STATES RUBBER CO.
NEW YORK, N. Y.—(315, 316, 321, 322)

EXHIBIT: Lastex and Laton elastic yarns; Lactron and Revere rubber threads; Uspun natural and synthetic knitting yarns.

IN ATTENDANCE: V. C. McQuiddy, Jr., J. Shaw, J. Blum, T. Byrne, R. P. Clark, R. R. Hampton, J. Reed, G. Wright, H. E. Cooper, H. Young, M. Bliss, B. Cobb, W. Connelly, B. Giddings, P. Regan.

UNITED STATES TESTING CO., INC.
HOBOKEN, N. J.—(477, 478)

UNIVERSAL WINDING CO.
PROVIDENCE, R. I.—(219-224)

EXHIBIT: Yarns and fabrics made of Superloft and Saaba yarns, and a demonstration of in-plant quality control procedures.

IN ATTENDANCE: Robert Leeson, Paul P. Johnson, R. S. Pennock, J. A. Nasmith, J. W. Stribling, J. J. White, J. R. Breen, J. P. Barrie, E. C. Parish, L. E. French, H. H. Richardson, K. H. Gibson, Dr. C. J. Dudzik.

UTICA NOVELTY & MILL SPECIALTY CO.
UTICA, N. Y.—(161, 162)

EXHIBIT: Their combination cutting and winding machine; new automatic double-cuff cutting and turning machine; collarette cutting and winding machine; and their hand laying-up machine.

IN ATTENDANCE: Joseph A. Firsching, Jr., Donald Firsching, Joseph A. Firsching, 3rd.

VENANGO ENGINEERING CO., INC.
PHILADELPHIA, PA.—(484)

WALTON LABORATORIES, INC.
IRVINGTON, N. J.—(446-447)

EXHIBIT: Atomizing type humidifiers; new air filter.

IN ATTENDANCE: Jack Feldermann, Bob Lewis, Frank Hartwell, George Lyons, Al Janks.

WATERMAN, MERRILL, LARGEN & CO., INC.
PROVIDENCE, R. I.—(545, 546)

WESTINGHOUSE ELECTRIC CORP.
PITTSBURGH, PA.—(76, 77, 102-106)

EXHIBIT: Their new Type AVR Reactifier Drive; DynAC Controllers; their Mot-O-Trol Drive; and Life-Line "A" Motors.

IN ATTENDANCE: P. F. Holstein, F. T. Brenner, S. E. Morgan, D. B. Cullis, John Cross.

WHITIN MACHINE WORKS
WHITINSVILLE, MASS.—(19, 19A, 28)

EXHIBIT: First showing of imported stretch yarn machine to be sold by them under license.

IN ATTENDANCE: J. Hugh Bolton, John H. Bolton, Jr., E. K. Swift, Jr., R. F. Waters, G. F. McRoberts.

WILDMAN JACQUARD CO.
NORRISTOWN, PA.—(250-259)

EXHIBIT: Their Model TJI-12 14¼ cut—30" dia. Machine; their Model PB-2 10 Feed—8 cut—22" dia. Machine; Model PB-3—48 Feed—20 cut—30" dia. Machine; SCOP—84 Needle—4" dia. Machine and SCOP-SE—84 Needle Machine; their AI-32—17½ cut—32" dia. Machine; and their LHB-6—4 cut—30" dia. Machine.

IN ATTENDANCE: C. F. Miller, C. F. Fitz-Gerald, J. O. Olachea, C. D. Cunningham, Jr., F. C. Beeton, R. Phillips, J. Forstadt, T. H. West, A. C. Mahassel, J. H. Grant, R. C. Dott, J. A. Titti, R. L. Lamontagne, J. J. Brennan, P. E. Howard, C. Quier, J. Nussbaum, R. C. Southworth, H. Billings, II.

WILCOX & GIBBS SEWING MACHINE CO.
NEW YORK, N. Y.—(353-354, 365-366)

WITT'S CO.
NEW YORK, N. Y.—(49, 50)

Use of New Fastener Gains

Increasing uses are reported for the recently introduced "Velcro" fasteners, made of two nylon strips, which work on the touch-and-close principle. The fastener is buttonless and zipperless and closes when pressed together, opens when pulled apart.

U. S. production of the new product, which began last August, has increased 125,000 yards per week to meet demand, and is expected to double by this summer. It is available to manufacturers in from ¾-inch to 2-inch widths, and in a wide variety of staple and fashion colors.

A Swiss inventor, Georges de Mestral, developed the touch-and-close fastener. Velcro is made of two strips of nylon tape; one strip is faced with tiny nylon "burrs" (hooks) and the other with tiny loops. Velcro is manufactured in the U. S. by American Velcro, Inc., and is marketed in the U.S., South America, Japan, and other parts of the East by Velcro Sales Corp. Marketing activities in Canada are handled by Canadian Velcro. Ltd.

Velcro fasteners are now being used on women's brassieres, foundation garments, slips, petticoats, pajamas, slacks, skirts, dresses, rainwear, shorts, sweaters, robes, blouses, jackets, coats, furs, sportswear, belts, handbags, shoes, beachwear, ponchos, cosmetic cases, and closet accessories.

For men there are Velcro-fastened trousers, jackets, coats, undershorts, pajamas, insulated underwear, hunting clothes, stadium blankets, T-shirts, polo shirts, shoes, wool shirts, sports wear, robes, belts, luggage, brief cases, and small leather items.

Among industrial uses for Velcro fasteners are: military electronic equipment, bus and airplane interiors, ace bandages, blood pressure cuffs and tourniquets, surgical supports, clothing for the physically handicapped, mine safety appliances, industrial filters, automobile visors. *For further information write the editors.*

Close-up showing principle of Velcro Fastener

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"Plasticell" *"Filmcell"*

"Tenacell"

For the manufacture of Rayon and Acetate Textile Yarns, High Tenacity Tire Cords, Staple Fibres, Transparent Films, Plastics and other cellulose derivatives.

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THE Kenyon PIECE DYEWORKS INC.

"KENYON OF KENYON, RHODE ISLAND"

NEW FABRICS

NEW YARNS

Acrilan-Wool Fabric

A new sports outerwear fabric of 50% wool and 50% Acrilan, Chemstrand's acrylic fiber, has been introduced by R. G. Fromkin Textiles. The new fabric is said to combine good washability with fine "hand" qualities. The fabric, made in clear or fleeced finishes, offers warmth without weight, long wear, strength and shape retention qualities, according to the manufacturer. *For further information write the editors.*

Colorful Prints

Lowenstein's Belaire Division is offering colorful new prints on flat and textured cloths for over-the-counter selling for Spring and Summer. A large group of model garments is being shown at Lowenstein's New York showrooms. Color features include shock pinks, bright marigolds, turquoises, and a whole family of garden greens. Procion dyes add a brilliant effect to the fabrics. *For further information write the editors.*

Nonwoven Wiping Cloths

Chicopee has introduced a new all-purpose, nonwoven re-usable counter towel. The nonwoven fabric made solely of rayon staple, is designed primarily for use in restaurants, bars, drug stores, hotels, schools and hospitals. Tests are reported to show that cleaning with the new nonwoven towel kept counters, bars, and tables cleaner, brighter and more sanitary. Because of its good strength, the nonwoven cloth can be rinsed. *For further information write the editors.*

New Vinyl Upholstery

United States Rubber Co. is offering a new upholstery line, called Pace, which features a non-repeat random vinyl design on fabric, with a silver print accenting the random pattern. The upholstery has a woven look, is soft and easy to clean. The new fabric is an addition to the company's Naugaweave line. *For further information write the editors.*

Men's Tycora Suitings

Men's suiting fabrics made from newly-developed Tycora yarns especially processed for both coolness and wrinkle-resistance will be introduced in the Spring-Summer lines of the House of Worsted-Tex; Botany 500, Moyer Manufacturing Co., and Sunstate Slacks of Tampa. Textured Yarn Co., maker of all Tycora yarns, reported that the fabrics, woven by Pressman-Gutman, provide lightweight wearing comfort in hot weather. Texture Yarn said that garments made of the new fabrics of Tycora are featured as automatic wash-and-wear. *For further information write the editors.*

Surface Design Sparkle

Dobeckmun Co., division of Dow Chemical Co., reports that "Metalflake", its newest raw material for decorative surface design, is finding use in a widening range of consumer products. The tiny bits of colored metallic foil, which make up Metalflake, are produced by Dobeckmun in uniform sizes such as square, rectangle, round, star, oblong threads and many others. The new product provides sparkling decorative effects on textiles, paper, plastics, leather and other material surfaces. Originally developed as a byproduct of Lurex metallic yarn, Metalflake production is now controlled under its own quality standards. Metalflake is said to be non-tarnishing; its colors do not run and it is not oily, thus lending itself well to imbedment applications. *For further information write the editors.*

THE TEXTILE DISTRIBUTORS INSTITUTE, INC.

NEWS AND COMMENT

Progress in Design Protection

A decision recently handed down by the U. S. District Court in the Southern District of New York has received attention as being of special interest in the effort to further protection of fabric design. As summarized in a recent bulletin of the Textile Distributors Institute, the facts of the case are these:

The plaintiff designed a dress fabric (apparently a print) containing figures and architecture pertaining to Arabia and the Near East. The plaintiff had this design copyrighted in Washington. The defendant came out with a fabric containing a design substantially identical to that of the plaintiff. It was conceded that the plaintiff's design was an original one and the court found that the designs of the two companies were sufficiently intricate so that the designers of the two fabrics could not have independently come up with designs so identical.

The plaintiff sought to enjoin the defendant from selling or distributing its fabric, claiming that defendant was underselling plaintiff on this item and that the life of plaintiff's new design was a short one and that unless a temporary injunction was granted, plaintiff's fabric would be ruined in the market by the time the case was actually reached for trial.

In other words, plaintiff sought an immediate injunction which would prevent defendant from selling its fabric during the next few months and before the case actually came to trial.

The court found that a fabric design of this type came within the statutory provisions of the Copyright Law. It ruled that a design printed upon dress fabric is a proper subject of copyright both as a "work of art" and as a "print and pictorial illustration . . . for articles of merchandise." The court also found, on the available evidence, that the defendant copied the plaintiff's original design and thus infringed plaintiff's valid copyright. The court further found that unless the defendant was enjoined from continuing its actions in copying and selling the subject fabric, the plaintiff would be irreparably damaged. Accordingly, defendant was temporarily enjoined from continuing the sale of its fabric.

TDI Golf Tournament June 10 to 12

The 12th annual golf tournament of the Textile Distributors Institute will be held June 10 to 12 at Shawnee Inn, Shawnee-on-Delaware, Pa., according to Samuel Schwartz, Cadillac Textiles, Inc., chairman of the golf tournament committee.

While the major attraction of the three day outing will be golf, there is also tennis, and swimming, fishing and boating on the nearby Delaware River. Reservations for the tournament, which is limited to men will be accepted only for the entire three days. Since the number of reservations is limited, they will be accepted in the order received. Acceptance of reservations will close on May 15 or earlier if the number available is filled before May 15. No cancellations will be accepted after June 1. Attendance at the tournament is restricted to TDI members, mill and yarn interests, factors, bankers, brokers, dyers and printers who may attend by invitation or, as a convenience, make their own reservations if they so desire.

Persons interested in making reservations are urged without delay to communicate with Miss Hilda A. Wiedenfeld, executive director of TDI at 469 Seventh Ave., New York 18, N. Y., Longacre 3-2992.

Samuel Schwartz

Talent Wanted for TDI Show

The sign is out for amateur theatrical talent among TDI members and others associated with the converting trades to apply for acting parts in the annual musical show staged at the TDI golf tournament. The tournament this year will be held on June 10 to 12 at Shawnee Inn, with the annual musical show being staged on the evening of Thursday, June 11.

The show is a near-professional affair, being coached and costumed by professionals. It is famous throughout the textile industry for its hilarity and liveliness. Men in the industry interested in participating are invited to contact Miss Hilda A. Wiedenfeld, executive Secretary of the Textile Distributors Institute at the Institute's office in New York City.

New Associate Members

Associate Membership in the Textile Distributors Institute has been extended to two more companies, according to an announcement last month by Hilda A. Wiedenfeld, executive director. The new associate members are Modern Central Dyers & Finishers, Inc., 118-132 Third Ave., Paterson, N. J., Edward Shannon, president, and Industrial Rayon Corp., 660 Union Commerce Building, Cleveland, Ohio, represented by G. L. Rounds, vice president in charge of marketing and F. L. Bissinger, group vice president.

Abraham Litwack Dies

Abraham Litwack of New England Textile Co., Inc., a member of the Institute, died in March. Sincere condolences and heartfelt sympathy on his death was extended by the members and officers of the Textile Distributors Institute to his bereaved family including his sons, Jack, Murray and Ralph.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in March 1959. All prices are given as subject to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices Effective December 21, 1956

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

* Standard Twist 2¢ additional.

Terms: net 30 days.

Celanese Corp. of America

Current Prices

Effective December 20, 1956

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.17	$1.18	$	$	$	$1.12	$ ....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....	....	.97	.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	....
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	....
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes ..... .76

55/0/15 Dull Tricot Beams ..... .985

2-Pound Cheeses ..... .01 Less Than 4-Pound Cheeses

2-BU and 4-Bu Tubes ..... Same Price as 4 and 6-Lb. Cones

2-Lb. Twist Tubes ..... .01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point).

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Celaperm Black Yarn Prices

Effective March 11, 1955

Denier and Filaments	4 & 6-Lb. Intermediate Twist Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Arnel Triacetate Yarn Prices

Bright & Dull

Effective August 19, 1958

Supersedes April 18, 1958

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/WKZ/15	$	$1.16	$ ....
55/2Z/15	1.32	1.33	....
75/WKZ/20	....	1.16	....
75/2Z/20	1.21	1.22	....
100/2Z/26	1.14	1.15	....
150/2Z/40	.95	.96	....
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	....
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—$.02 Additional

Premium for Black Arnel—$.25 Per Pound

Premium for Navy Arnel—$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Bms.
45-13	$1.03	$1.11		$1.12				
55-18	.925	.985		.99			$1.04	$1.05
55-24	.925	.985		.99			1.04	1.05
75-24	.84	.94		.95		$.98	1.00	1.01
75-50				.97		1.00	1.02	1.03
100-32	.81	.89		.90		.93	.95	.96
120-50	.77	.80		.81		.85	.86	.87
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-160					.65		.65	.66
900-44					.63		.63	.64
900-240					.63		.63	.64
1800-88					.61		.61	.62
2700-132					.61		.61	.62
3000-210					.61			.62

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28		1.29	1.32	1.32	1.34	1.35
100-32	1.14			1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-64	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08		1.09		1.12	1.14	1.15
100-32	.94			1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Specialty Yarns

Type 20 Same Price as Regular Yarn

Type C Same Price as Regular Yarn

Thick & Thin

Denier & Filament	Natural Cones	Beams	Black Cones	Beams	Color-Sealed Cones	Beams
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Tubes	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams	Low Twist Tubes	Zero Twist Spun Twist	Tricot Beams Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.82	$.87	$.86
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	8½ Turns	High Turn Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.29	1.55	....	....	....	1.85
65/45	1.19	1.35	....	$1.58	....	1.63
76/60**	1.08	1.22	....	1.45	$1.50	1.53
100/74**	.99	1.12	....	1.37	1.42	1.48
125/60	.98	1.09	$1.13	1.34	....	....
150/120	.96	1.05	1.15	1.30	....	....
300/225	....	.98	....	....	1.11	....
900/372	....	.88	....	....	....	....
1800/744	....	.88	....	....	....	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.10	....	....	....	....	$1.47	....
75/45*	1.01	....	$1.12	$1.12	$1.35	1.35	$1.43
100/60*	.93	....	1.07	1.07	1.27	1.27	1.35
125/60	.88	....	1.03	1.03	....	....	....
150/90*	1.00	....	.84	.84	1.18	1.18	1.27
150/120	.84	....	....	.96	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Turn Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	$1.60	$1.85	$1.85	....	....
75/45	1.45	1.55	1.55	$1.75	$1.85
100/60	1.35	1.45	1.45	1.65	1.75
150/90	1.18	1.25	1.25	1.60	1.70
300/120	1.18	1.25	....	....	....

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.50	$1.40
1519**	155/90	....	....	1.50	1.40
2008	200/120	....	....	1.11	1.01
3002	315/180	$1.15	$1.05	....	....
4011	410/224	1.15	1.05	....	....
6001	600/360	1.13	1.03	....	....
8001	860/450	1.13	1.03	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1515 can be run in warp or filling.

CUPIONI Type B

Code	Den/Fil	2½ Turn Cones
9650	70/45	$1.69
9660	100/60	1.53
1545	150/90	1.31
9730	285/135	1.15
9792	450/225	1.15
9814	600/372	1.12
9837	940/372	1.02

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black Comes in all deniers."

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9747	275/225	3½	$1.25
9798	450/372	2½	1.15
9823	600/372	2½	1.10
9847	960/372	2½	1.02
9885	1290/372	1½	1.00
9934	2680/744	1½	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9669	150/148	2½	$1.35
9769	300/224	2½	1.25
9782	450/270	2½	1.05
9807	600/405	2½	1.05
9840	900/450	2½	1.00
9924	2000/744	2½	.95

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices

Effective March 9, 1959

Standard Quality Yarns

Standard Quality Rayon Yarns

Den./Fil.	Luster	Turns	NATURAL Weaving Cones	Weaving Beams	Skeins Long	Skeins Short	Skeins Cakes	Knitting Cones	Knitting Tubes
50/18	E	5 S						1.59	
50/20	B	2.5 S					1.48		
75/10	B	3 S&Z					.98		
75/18	E	4 S						1.10	
75/30	B	2.5,4S&Z	1.10	1.10	1.18	1.27	.98		
75/30	B	8 S	1.20		1.35	1.45		1.20	1.25
75/45	P,E	2.5, 4,5S&Z	1.10	1.10	1.18	1.27	.98	1.10	
75/60	B,P	3,4 Z	1.12				.90		
100/14	B	3 S&Z				1.11	.86		
100/40	B,E	12 S						1.25	
100/40	B,P,E	4,5 S&Z					.83	.94	
100/40	B	6 S	1.13		1.22	1.32	1.05		
100/40	B,P	2.5,4S&Z	.94	.94	1.03	1.11	.86		
100/60	B	4 S&Z					.86		
100/60	E	2.5 S	.96	.96			.88		
125/40	E	3 Z					.83	.86	
150/40	B,P,E	2.1,3S&Z	.79	.79	.88	.95	.75	.79	
150/40	B,E	5 S&Z	.87	.87	1.07	1.17	.83		
150/40	B,P,E	8 S&Z	.92	.92	1.12	1.22	.88		
150/90	E	2.1 S&Z	.80	.80			.76		.85
200/40	P	3 Z	.78	.78	.87	.94	.74	.78	
200/40	B	5 S				1.03	.91		
250/60	P,E	2.4 Z			.86	.93		.77	
300/30	E	3 S	.78	.82					
300/50	B,E	3 S	.70	.73					
300/60,120	B,P,E	2.1 S&Z	.70	.70	.76	.83	.68	.70	
300/60	B	3.5 S	.70	.70	.76	.83	.68		
300/60	B	7 S	.83			.91			
300/40,120H.T.	B	2.5, 3,4S	.72	.72			.70		
450/80	B,E	3 S	.66	.68	.73	.80	.64		
600/80	B,E	3 S	.70	.72			.69		
600/120	B	3 S	.66	.68			.64		
900/120	B	3.4 S	.66	.68	.73	.80	.64		
900/120H.T.	B	3.6 S	.68	.68			.66		

B = Briglo E = Englo (Dull)

P = Periglo (Semi-Dull) H.T. = High Tenacity

Jetspun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams	Colors
100/40	Regular	2.5S	$1.31	$1.31	All
150/40	Regular	2.1S	1.14	1.10	All
200/40	Regular	8.3S	1.25	1.25	All
300/120	Regular	2.1S	1.05	1.06	All
450/80	Regular	3.0S	1.02	1.02	All
300/40	High	3.4S	1.08	1.08	All
600/80	High	3.4S	1.04	1.04	All
900/120	High	3.4S	1.03	1.03	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft (Lofted Rayon Filament Yarns) Natural and Jetspun®

Denier	Denier per Filament	Twist	Cones or Tubes Natural	Black	Other Colors
1000	7.5	3.5S	$.82	$1.17	$1.17
2200	15	3.5S&Z	.67	.77	.84
2700	15	3.5S&Z	.67	.77	.85
4300	8	3.0S&Z	.66	.76	.83
5300	15	3.0S&Z	.65	.75	.82

American Viscose Corp.

Effective February 27, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
		Regular Turns					
50	20	Bright & Dull	$	$1.62	$1.59	$1.59	$1.48
60	10	Bright	....	....	1.44	....	1.33
75	10-30	Bright	1.27	1.18	1.10	1.10	.98
75	30	Dull	....	....	1.10	1.10	.98
100	14-40	Bright	1.11	1.03	.94	.94	.86
100	60	Dull	....	....	.96	.96	.88
150	24-40	Bright	.95	.88	.79	.79	.75
150	40	Semi-Dull	.95	.88	.79	.79	.75
150	40	Dull	....	....	.79	.79	.75
150	90	Dull	....	....	.80	....	.76
200	10-44	Bright	.94	.87	.78	.78	.74
250	60	Semi-Dull & Dull	.93	.86	.77	.77	.74
300	15	Bright	....	.79	.75	.75	....
300	30	Dull Flat Filament	....	....	....	.82	....
300	44	Bright & Dull	.83	.76	.70	.70	.68
300	234	Dull	....	....	.80	....	.78
375	60	Bright	....	....	.69	.69	....
450	60-100	Bright	....	.73	.66	.68	.64
600	100	Bright & Dull	....	.73	.66	.68	.64
900	50-100-150	Bright	....	.73	.66	.68	.64
1200	75	Bright	....	.73	.66	.68	....
2700	150	Bright	....	.73	.66	.68	....
		Extra Turns Per Inch					
75	30	Bright 6-Turns	$1.45	$1.35	$1.20	$1.20	$ ....
100	40	Bright 6-Turns	1.32	1.22	1.13	1.13	1.05
150	40	Bright 6-Turns	1.17	1.07	.87	.87	.85
200	44	Bright 6-Turns	....	.98	.93	.93	....
300	15	Bright 5-Turns	....	....	.83	.83	....
300	44	Bright 4.3-Turns	....	....	.78	....	.76
300	44	Bright 6-Turns	.91	.84	.83	.83	.81
300	120	Rayflex 6-Turns	....	....	.90	.90	....
600	30	Bright 5-Turns	....	.81	.79	.79	.77
		Rayflex Yarns					
75	30	Rayflex	$	$	$1.18	$1.18	$1.09
100	40	Rayflex	....	....	1.03	1.03	.95
150	40-60	Rayflex	....	....	.82	.82	.78
200	75	Rayflex	....	....	.81	.81	.77
300	60-120	Rayflex	....	....	.72	.72	.70
450	120	Rayflex	....	....	.68	.68	.66
600	234	Rayflex	....	....	.68	.68	.66
900	350	Rayflex	....	.75	.68	.68	.66
		Thick & Thin Yarns					
150	40-90	Bright & Dull	$	$	$1.18	$	$ ....
200	75	Bright & Dull	....	....	1.08	....	....
300	120	Bright & Dull	....	....	.98	....	....
450	100	Bright & Dull	....	....	.92	....	....
490	120	Bright & Dull	....	....	.98	....	....
900	350	Dull	....	....	1.03	....	....
920	120	Bright & Dull	....	....	1.03	....	....

Colorspun Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	$1.63
100	Regular Strength	1.31
150	Regular Strength	1.14
200	Regular Strength	1.11
300	Regular Strength	1.06
450	Regular Strength	1.02
600	Regular Strength	1.02
900	Regular Strength	1.02
300	High Strength	1.08
450	High Strength	1.03
900	High Strength	1.03
300	Regular Strength 5-Turns	1.16

Avicron Yarns

Denier	Filament		Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply	$ .68
2700	150-300-980	Singles & 2 Ply	.65

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Corp. of America

Current Prices

Effective July 24, 1958

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil./Twist		Beams	Cones	Cakes
75/30/3			1.06	.94
100/40/2Z		.93		
100/40/3			.92	.84
100/40/5			.98	.88
100/60/2Z			.92	
100/60/3			.94	.86
125/40/2Z		.89		
125/40/3			.90	.81
150/40/0	NS		.71½	
150/40/2Z	NS	.78		
150/40/3			.76½	.73
150/40/5			.87	.83
150/40/8			.92	.88
150/90/0	NS		.74½	
250/60/0			.71	
250/60/3			.77	.74
300/50/0	NS		.67	
300/50/2Z	NS	.69		
300/50/3			.67½	.66
450/120/0	NS		.64	

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point).

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective with orders March 11, 1959

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		Beams	Cones (A) Tubes	Cakes
40	20	3	Textile "Cordura"*		$1.93	$1.88
50	20	3			1.66	
50	20	3	Textile "Cordura"		1.68	1.63
50	35	3	Textile "Cordura"		1.73	
75	10	3	Bright			.98
75	30	3		$1.10	1.10	.88
100	15	3	Bright			.86
100	40	3	Bright	.94	.94	.86
100	60	3	Dull		.96	.88
125	50	3		.92	.92	.83
150	40	3		.79	.79	.75
150	60	3	Bright	.79	.79	
150	60	3	Textile "Cordura"		.845	.815
150	90	3	Dull		.80	
150	100	3	Dull		.80	
300	50	2.5		.70	.70	.68
300	120	3	Textile "Cordura"	.71	.71	.69
450	72	3		.68	.66	.64
600	96	3	Bright	.68	.66	.64
600	240	3	Textile "Cordura"	.69	.67	
900	50	3	Bright	.68	.66	.64
900	144	3	Bright	.68	.66	.64
1165	480	3	Textile "Cordura"	.69	.67	.65
1800	100	3	Bright		.66	
2700	150	3	Bright	.68	.66	
			Thick and Thin			
100	40	3	#7 Bright		1.38	
150	90	3	#7 Bright		1.05	
200	80	3	#7 Bright		1.05	
450	100	3	#7 Bright		.89	
1100	240	3	#60 Bright		1.00	
2200	480	3	#60 Bright		.95	
			Monofils			
150	1	3	Bright	1.35	1.35	
300	1	3	Bright	1.15	1.10	
600	1	3	Bright		1.00	
			Plush			
300	30	3	Dull	.82	.79	

(A) 2¢/lb. additional for cones less than 3#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective March 9, 1959

Continuous Process Textile Yarns

Denier	Filament	Turns per In.	Type	Beams	2.8# Cones	4.4# Cones and Tubes	Skeins
150	40	2.5"S"	Bright	.79	.79		.88
200	20	2.5"S"	Bright	.78	.78		.87
300	44	2.5"S"	Bright	.70	.70		.76
450	60	2.0"S"	Bright	.66		.66	.73
600	90	1.5"S"	Bright	.66		.66	.73
900	50	2.0"S"	Bright	.66		.66	.73
900	150	1.5"S"	Bright	.66		.66	.73
1100	480	2.0"Z"	Bright extra strong	.66		.66	.73

Standard skein lengths—150 denier, 16,300 yards; 300 denier, 6,500 yards; 450 denier, 4,400 yards; 600 denier, 3,200 yards; 900 denier, 2,100 yards; 1100 denier, 2,000 yards.

Lustre #4 is semi-dull.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

TEXTILE NEWS BRIEFS

Gov't Spinning Laboratory

The U. S. Agriculture Department's new 1,000-spindle pilot spinning laboratory was scheduled to begin production in mid-March at Clemson, S. C. First personnel reported January 15 for training in facilities of the Clemson College School of Textiles. This includes four card frames, four spinning frames, totaling 1,000 spindles; one drawing frame and one roving frame. The lab will use the college's opening and picking equipment, already available to research in the modern textile school plant.

Changes at Onyx

Sales departments of the textile, paper and industrial divisions of Onyx Oil & Chemical Co. have been merged. Irving Gaines has been promoted to general sales manager, and Philip E. MacLean has been named sales manager. The reorganization was made to provide more efficient utilization of technical service personnel and field sales force.

New Dow Sales Center

Dow Chemical Co. has established a textile fibers sales center at Charlotte, N. C. It will serve nine southern seaboard states from North Carolina to Texas. Dow produces three groups of textile fibers: Zefran, an acrylic alloy; Rovana, a new vinylidene chloride copolymer formerly known as Q-957, and the Lurex line of metallic yarns. William B. Guerrant is the district sales manager for textile fibers at the new Dow center.

New N. C. Knitting Plant

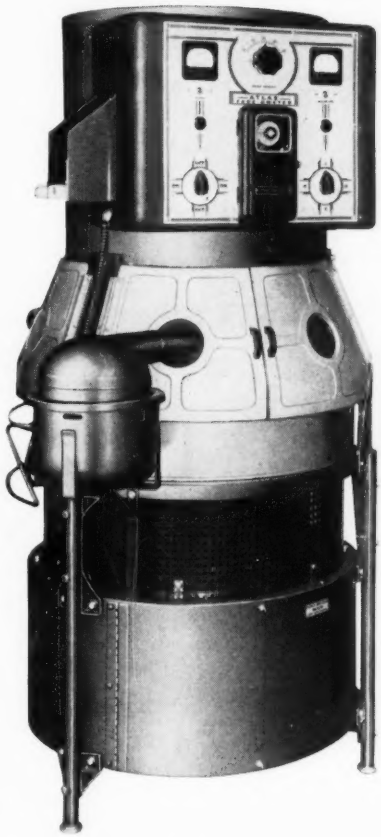
The newly-formed Jefflene Corp., manufacturer of knit garment cloth, has purchased two former properties in Carrboro, N. C., of Pacific Mills, Inc. Jefflene plans to start operations in Carrboro shortly. It expects to employ more than 500 persons in knitting, dyeing and bleaching of cotton cloth for knit garment manufacturers. Carrboro adjoins Chapel Hill, N. C., and is about 12 miles west of Durham.

Givenchy Sweaters Shown

Hubert de Givenchy's collection of sweaters and separates, including styles in the new filament yarn of Orlon acrylic fiber, recently was unveiled to the trade by Du Pont. The new filament yarn has been textured to give a sleek look to knit fabrics. The collection includes combinations of different knits—long-haired yarns with fine yarns, for instance.

the NEW Model FDA-RC

Fade-Ometer®



Exposure conditions can be varied to provide good correlation with either the Daylight or Sunlight exposure methods.

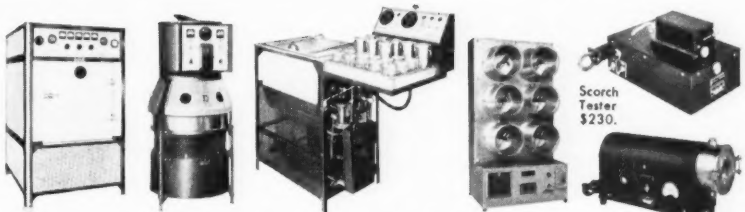
As the two natural light methods on moisture sensitive materials can produce wide variation in colorfastness ratings, it would be expected that two different exposure conditions in the Fade-Ometer would be necessary to duplicate them.

To simulate the day and night cycling of the Daylight method where the specimens are left in the cabinet 24 hours a day, new conditions of higher relative humidity during alternate periods of light and darkness are utilized in the Model FDA-RC.

The new Fade-Ometer may also be operated under the standard conditions for the FDA-R to duplicate the Sunlight method where the specimens are placed in the cabinet only between 9 and 3 on sunny days.

Added new features include an electrically operated atomizer, combination Cycle Meter and Time Switch, and modification of the electrical circuits to permit operation of the components during the light-off period.

All Model FDA-R Fade-Ometers now in use may be easily converted into the Model FDA-RC. *Write for full details on either a new machine or on conversion of present equipment.*



Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

Accelerator® $435.

ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Illinois, U.S.A.

Sales representatives in principal cities throughout the world

Strawn Yarns

Denier	Filament	Turns per In.	Type	4.4# Cones	Spools and Tubes	Skeins
150	1	0	Bright and Dull	1.25	1.30	1.35
150	1	2	Bright and Dull	1.25	1.30	1.35
300	1	0	Bright and Dull	1.10	1.15	1.20
300	1	2	Bright and Dull	1.10	1.15	1.20
450	1	0	Bright and Dull	1.00	1.05	1.10
450	1	2	Bright and Dull	1.00	1.05	1.10
1250	1	0	Bright and Dull	1.00	1.05	1.10
1250	1	2	Bright and Dull	1.00	1.05	1.10

Tubes— 5¢ per pound over cone prices.
Skeins—10¢ per pound over cone prices.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Prices Effective March 6, 1959

First Quality Yarns	Den./Fil	Twist	Cones Knitting*	Cones No Twist Knitting Cones	Cones Weaving Cones	Beams, Tubes**	Velvet Beams & Cones	Untreated Cakes
	75/30	3.5			1.10	1.10		.98
	75/30	7			1.23	1.24		
	75/30	12			1.31	1.31		
	75/30	15			1.33	1.33		
	75/30	20			1.36	1.36		
	100/40/60	3.5			.94	.94		.86
	100/40	12			1.18	1.18		
Normal	125/52/60	3			.92	.92		.83
Strength Yarns	150/42	0		.71½				
NARCO	150/42/60	3	.77½		.79	.81		.75
	150/42 Marq. X	3			.73½			
	300/75	0		.68				
	300/75	3	.70		.70			.68
	300/75 Marq. X				.65			
	900/46	2.5	.66		.66			
	1800/92	2.5	.66		.66			

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.

Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.

Prices subject to change without notice.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective December 19, 1958

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.62
1230/480	High	.62
1650/720	Low	.56
1820/720	High	.55
2200/960	High & Low	.55

Enka II

*1100/720	Low	.66
*1650/1100	Low	.60
2200/960	Low & High	.59

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River.

* Tyrex certified viscose yarn.

American Viscose Corp.

Effective February 2, 1959
Revised March 4, 1959

Tyrex
Tyrex Certified Viscose Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	0	.66	.66
1100	980	Z	.66	
1650	980	0	.60	.60
1650	980	Z	.60	—

Tire Fabric Made with Tyrex Certified Viscose Tire Yarn and Cord

Denier	Filament		Carcass	Top Ply	Breaker
1100	980/2		.78	.78	.78
		Factor*	Open-525	300-490	115-275
1650	980/2		.685	.695	.72

* Factor determined by dividing total ends by picks.

Tyrex is a certification mark of Tyrex Inc. for Viscose Tire Yarn and Cord.

Rayon Tire Yarn
Yarn

Denier	Filament	Twist	High Strength	Tire Yarn	Super "Rayflex" 110-210-310	Super "Rayflex" 120-220-320
1100	490	Z	...	.62		
1100	980	0-Z	...	...	.65	.66
1150	490	Z	.62	...	...	...
1230	490	Z	.62	...	...	...
1650	980	Z	.56	.56	.59	.60
1650	980	0	...	.56	...	.60
1875	980	Z	.56	...	.59	.60
2200	980	0	...	.55	...	.59
3300	1960	0	...	...	...	.59

High Strength available on cones — tubes — beams.

Tire Yarn and Super "Rayflex"

0 twist — Available on cones, beams or 10# tubes.
Z twist — Available on beams.

Sewing Thread

1100/980 Super "Rayflex"	0-Z	Cones	.63
1780/980 Super "Rayflex"	0-Z	Cones	.58

Also available in colors at .07 premium.
All yarns sold "Not Guaranteed for Dyeing".

Rayon Tire Fabric

1100	490	Tire	.74	.74	.74
1100	980	Super-110-210-310	.77	.77	.77
1100	980	Super-120-220-320	.78	.78	.78
		Factor*	Open-525	300-490	115-275
1650	980	Tire	.645	.655	.68
1650	980	Super-110-210-310	.675	.685	.71
1650	980	Super-120-220-320	.685	.695	.72

* Factor determined by dividing total ends by picks.

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations — prices quoted on request.

When supplied, yarns and cords in special packages take premiums indicated.

10.5 oz. Wardwell tubes	.09
1.5 lb. Regular Braider tubes	.05
Adhesive Dipped yarn	.05

The following deposit charges are made on invoices.

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition — freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of Mississippi River in which event only the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Prices subject to change without notice.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "
60/2.5/80 Olive Green—Spun Dyed—OG106		4 lb. Cones	3.50 lb.

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
* No transportation allowed (F.O.B. shipping point).
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
* No transportation allowed (F.O.B. shipping point).
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices
Effective with orders February 26, 1959

"Super Cordura"*

Den Fil	Turns/in	All Packages
1100-720	2	$.66
1200-720	2	.66
1530-960	2	.63
1600-960	2	.60
1650-1100	2	.60
1800-1100	2	.60
2200-1440	2	.59
2400-1440	2	.59

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Accurate
Yarn is under perfect tension from a central location. One dial adjustment changes tension uniformly at all tension stations.
The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.
DIAL CONTROL of YARN TENSION

at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-SAVING, QUALITY-IMPROVING, COST-CUTTING LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

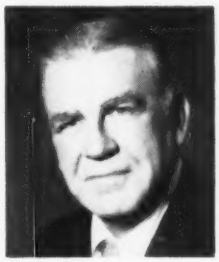
It Pays to Know LINDLY the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

Cobb Joins Denman

Hayden C. Cobb has been appointed sales manager of the Denman Textile Division of The McCandless Corp. He will make his headquarters and the new branch of the Denman Division, 607 West 5th Street, Charlotte, N. C. Denman expects to utilize the new branch for its sales offices and warehouse in the South. Denman manufactures conventional rubber and fabric pickers, lug straps, and other loom parts as well as a new line of plastic parts.

Dr. E. I. Stearns has been named technical manager of the dyes department of American Cyanamid Co.



L. D. Bulluck

Leigh D. Bulluck has been elected president of Hanes Hosiery Inc.

Steve Kowal has been appointed sales representative for Apex Chemical Co., Inc. in the North and South Carolina territory.

D. W. Chappuis

David W. Chappuis has been elected controller of Celanese Corporation of America, succeeding **James H. Black.** At the company's Summit, N. J. research laboratories **J. Stewart Campbell** has been named manager of laboratory services, **Dr. Michael J. Curry,** manager of the plastics research department and **Dr. William J. Evers,** manager of the exploratory polymer research department.

At the Fiber Industries, Inc. plant in Shelby, N. C., **Lyman H. Allen, Jr.** has become engineering and maintenance manager, **William P. Humphreys,** production manager, and **Eugene J. Machowicz,** accounting manager. Fibers Industries, Inc. was organized jointly by Celanese Corp. of America and Imperial Chemical Industries Ltd., to produce Teron.

(Continued on Page 104)

"MAKES ONE BEARING OUTLIVE TWO"

say Leading Textile Manufacturers

LUBRIPLATE Lubricants actually condition bearing surfaces and stop progressive wear. They prevent rust and corrosion and resist steam, hot water and many acids. They meet all conditions of the Textile Industry. Use LUBRIPLATE and make One Bearing Outlive Two.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

Industrial Rayon Corporation

Effective March 1, 1959

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

Denier	Filament	Turns per Inch	Beams	4.4# Cones
1100	480	1.5 "Z"	.62	.62
1650	720	1.5 "Z"	.56	.56
2200	1000	1.5 "Z"	.55	.55
3300	1440	1.5 "Z"	.55	.55
4400	2000	1.5 "Z"	.55	.55

Type 400 prices are 4¢ more.

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

Super Super High Strength Continuous Yarn Type 710		Cones	Beams
1100/720	1.6Z	.66	.66
1650/720	2.0Z	.60	.60
Tire Cord Fabrics			
Super Super High Strength Type 710			**Rolls**
1100/720			.78
1650/720			.68½

* Oiled Cones $.01 per pound extra for Graded Yarns only.
** 1 lb. Tubes $.02 per pound extra for Graded Yarns only.
† Special Quality Marquisette Tubes and Cones.

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

CELLULOSIC STAPLE & TOW

ACETATE

Celanese Corp. of America

Current Prices

Effective March 17, 1958

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple	
3, 5.5 & 8 Denier (Regular Crimp, Type HC, Type D)	$.37
2, 12 & 17 Denier (Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5, 8, 12 & 17 Denier	.35
Type K—(Available under Celanese License Agreement)	.39
⅜" to ⅞" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	$.37
2, 12 & 17 Denier	.38
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Celanese Corp. of America

Current Prices

Effective March 17, 1958

(Most Deniers Available in Bright or Dull Luster)

Arnel Triacetate Staple and Tow

Arnel Triacetate Staple	Bright & Dull
2.5 Individual Denier	$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier 114,000 Total Denier	$.60
5.0 Individual Denier 90,000 Total Denier or 180,000 Total Denier	.60

Packaged on Ball Warps

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

CROSS-LINKED

Courtaulds (Alabama) Inc.

Effective July 25, 1958

Corval

Man-made, cross-linked, cellulosic staple,
Bright and Dull, 1½, 3 and 5½ denier ..... $.40 per lb.

Topel

Man-made, cross-linked, cellulosic staple,
Bright and Dull, 1½, 3 and 5½ denier ..... $.34 per lb.

Terms: Net 30 days f.o.b. LeMoyne, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

RAYON

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .31
"Viscose 22"	.31
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco XL"	
1.0 Denier	.40
1.5 & 3.0 Deniers	.37
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.32
8.0 & 15.0 Deniers	.34
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.33

COLORSPUN STAPLE

	1.5 Denier 1 9/16" Code	Price
Sea Foam	517	45¢
Spun Gold	614	45¢
Cascade	419	40¢
Silver Gray	208	40¢
Bridal Rose	710	40¢
Pale Pink	708	40¢
Rosewood	835	45¢
Bisque	803	40¢
Champagne	833	40¢
Sandalwood	802	40¢
Apple Red	700	56¢
	3.0 Denier 2"	
Mint Green	505	45¢
Pale Pink	708	40¢
Bisque	803	40¢
Sandalwood	802	40¢
Nutmeg	801	45¢
Gold	603	45¢
Turquoise	408	40¢
Wine	304	57¢
Gray	208	40¢
Spice Brown	800	45¢

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)

1.5, 3.0 & 5.5 Denier Per Filament	.33
9.0 Denier Per Filament	.35

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective 1/1/58

Rayon Staple

	Brt.	Dull
Regular		
1.5 and 3 denier	$ .31	$ .31
Crimped		
8 denier	.34	...
15 denier	.34	.34

Celanese Corp. of America

Current Prices

Effective Dec. 3, 1957

Rayon Tow

	Bright & Dull
1.5, 3, 5.5 D.P.F. Total denier 200,000	.33
8 D.P.F. Total denier 207,000	.35

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Effective August 8, 1958

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.31	$.31
Available in 1⅛", 1-9/16" and 2".		

Crimped Rayon Staple

3 and 5½ denier	$.32	$.32
Available in 1-9/16" and 3".		
3 denier		.32
Available in 2".		

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-9/16"	3 Den. 2"	Price per Lb.
	(Code numbers for color and denier)		
Black	1404	1419	37¢
Tan	8004	8019	39¢
Medium Brown	8804	8819	39¢
Silver Grey	1004	1019	39¢
Mocha	7704	7719	39¢
Spicenut	7804	7819	39¢

New Dryer

(Continued from Page 60)

setting because unevenness at this point results in improper hand. The dryer is equipped with push-button control and prewired approved safety circuit. The temperature and rate is adjusted from the beginning to the end of the drying cycle to suit the requirements of fiber and fabric.

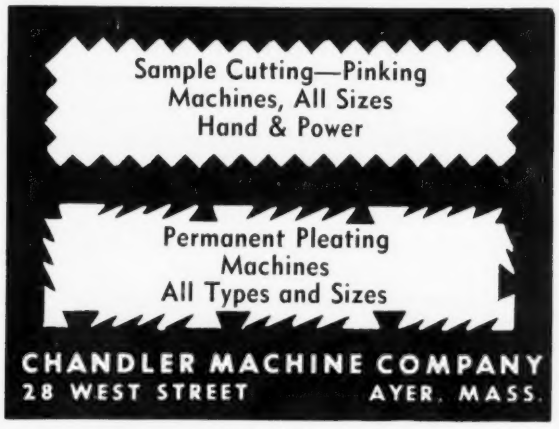
Maximum capacity of the dryer is 450°F. In practice, however, Hope Valley runs between 250°F up to 400°F, depending upon the type of goods being handled. Cloth speeds vary from 12 to 25 yards per minute depending upon the construction of the material and the amount of heat and time required for setting. The material moves steadily ahead so that every square inch gets the same treatment; there is no over heating beyond the required curing temperature.

The insulated housing is made up of self-supporting steel panels filled with glass wool and the exhaust system prevents any discharge of heated air or fumes into the working areas.

Largely owing to a space condition at Hope Valley, the housing is 4″ thick rather than the usual 2″ thickness. With a capacity of 450°F, this thicker housing has worked out well in keeping radiation from escaping to the room. There are the usual large, hinged access doors, supported in standard steel frames set within individual panels. These are placed so as to provide an entrance wherever needed. Very carefully designed to fit the limited height available without sacrifice of performance or insulating value of the housing. Even while operating at temperatures of 450°F. this 4″ thick insulated housing keeps radiated heat from the room as well as escaping from the cloth slots. There are the usual large hinged access doors, supported in standard steel frames set within individual panels. These are placed so as to provide an entrance wherever needed.

Price Set for New Fiber

American Viscose Corp. has set the price of its new Fiber 40 cellulosic fiber at 40 cents per pound. The new product is now in limited commercial production. (For a detailed report on the properties of this new fiber see "Papers of AATT" elsewhere in this issue.)


Sample Cutting—Pinking Machines, All Sizes Hand & Power
Permanent Pleating Machines All Types and Sizes
CHANDLER MACHINE COMPANY
28 WEST STREET
AYER, MASS.

"See you at the Knitting Arts Show."

WHITINSVILLE (MASS.) SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
Rep. for Ala., Ga., & Tenn.: H. L. WILLIAMS, Box 222, West Point, Ga.

NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN

New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.

BW MACK ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

Dark Brown	8604	8619	40¢
Aqua	4704	4719	40¢
Rose	5804	5819	40¢
Dawn Pink	5904	5919	40¢
Ecru	7904	7919	40¢
Slate Grey	0804	0819	43¢
Light Blue	4004	4019	44¢
Sulphur	2004	2019	44¢
Nugget	2304	2319	44¢
Apple Green	5104	5119	45¢
Sage	5304	5319	45¢
Crystal Blue	3904	3919	45¢
Peacock Blue	4604	4619	46¢
Medium Blue	4204	4219	48¢
Dark Blue	4404	4419	49¢
Hunter Green	5404	5419	49¢
Indian Yellow	2504	2519	49¢
Pink	6004	6019	50¢
Turquoise	4804	4819	50¢
Malachite Green	5204	5219	51¢
Red	7004	7019	56¢

(In addition to the above, Black is also available in:
1½ den. 1⅛" (1401) 3 den. 1-9/16" (1416)
3 den. 1⅛" (1413) 5½ den. 3" (1429)

Terms: Net 30 days f.o.b. LeMoyne, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective November 3, 1958

REGULAR

1.5 denier Bright
1 9/16", 2" ..... .31

VISCALON 66 (Crimped)

8 denier 3" Bright ..... .34
15 denier 3" Bright ..... .34
15 denier 3" Dull ..... .34

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	
Sandalwood	45¢	45¢	
Nutria	45¢	45¢	
Sea Green	45¢	45¢	
Mint Green	45¢	45¢	
Champagne	45¢	45¢	
Midnight Black	45¢		45¢
Gold	48¢	48¢	
Turquoise	45¢	45¢	
Melon	48¢	48¢	
Capri Blue	45¢	45¢	
Charcoal Grey	45¢	45¢	
Coco	46¢	46¢	
Sable	47¢		47¢
Tangerine	65¢		65¢
Chinese Red	65¢		65¢
Larkspur Blue	45¢	45¢	
Royal Blue	65¢		65¢
Lemon Peel	54¢	54¢	54¢
Kelly Green	54¢	54¢	54¢
Bitter Green	65¢		65¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

Rayon Staple

Super High Tenacity	Bright
No. 1 (Unshrunk)	
1, 1.5 & 3 deniers	.40
No. 2 (Preshrunk)	
1, 1.5 & 3 deniers	.40

Rayon Tow

Super High Tenacity	
2200 denier, 1.0 and 1.5 D/F	57.5
4400 denier, 1.0 and 1.5 D/F	47.5

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Caprolan®†

Effective May 20, 1958

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.
200	16	1½	Z	B	Cone	$1.49
560	32	1	Z	HB	Aluminum Tube	$1.39
840	136	½	Z	HBT	Aluminum Tube	1.20
840	136	½	Z	HBT	Beams	1.20
1050	56	½	Z	HB	Aluminum Tube	1.24
2100	112	½	Z	HB	Aluminum Tube	1.20
Heavy Yarn						
2100	408	0	O	HB	Paper Tube*	$1.18
2500	408	0	O	HB	Paper Tube*	1.18
3360	544	0	O	HB	Paper Tube*	1.17
4200	680	0	O	HB	Paper Tube*	1.17
4200	224	0	O	HB	Paper Tube*	1.19
5000	816	0	O	HB	Paper Tube*	1.17
5000	280	0	O	HB	Paper Tube*	1.19
5800	952	0	O	HB	Paper Tube*	1.17
7500	1224	0	O	HB	Paper Tube*	1.16
10000	1632	0	O	HB	Paper Tube*	1.16
15000	2448	0	O	HB	Paper Tube*	1.16

Terms—Net 30 days.
Prices subject to change without notice.
All prices quoted F.O.B. Shipping Point.
Following are invoiced as a separate item.
Bobbins—45 cents each.
Aluminum Tubes—40 cents each.
Beams—$220.00 each.
Cradles for Beams—$53.00.

B—Bright.
H—High Tenacity.
T—Heat Stabilized.

* Paper Tubes non-returnable, no charge.
** Type is used to describe luster and tenacity

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Enka Nylon Yarn Prices

Effective August 19, 1958

Den/Fil	Twist	Luster	Type	Tenacity	Pkg.	Net Wt. Pkg.	Price/Pound Std.	Price/Pound Sub.
15 monofil	0.5Z	Semi-dull	9506	Normal	Pirn	1 lb.	$5.25	$5.00
15 monofil	0.5Z	Semi-dull	9506	Normal	Pirn	2 lb.	5.25	5.00
15 monofil	0.5Z	Semi-dull	9506	Normal	Beam		5.36	
15 monofil	0.5Z	Dull	9514	Normal	Pirn	1 lb.	5.30	5.05
15 monofil	0.5Z	Dull	9514	Normal	Pirn	2 lb.	5.30	5.05
15 monofil	0.5Z	Dull	9514	Normal	Beam		5.41	
15/2	0.5Z	Semi-dull	9518	Normal	Pirn	1 lb.	7.37	6.70
18/2	0.5Z	Semi-dull	...	Normal	Pirn		6.65	6.10
20 monofil	0.5Z	Semi-dull	9524	Normal	Pirn	1 lb.	4.95	4.50
20/2	0.5Z	Semi-dull	9478	Normal	Pirn	1 lb.	5.55	5.05
30/4	0.5Z	Semi-dull	...	Normal	Pirn		2.62	2.42
30/6	0.5Z	Semi-dull	9466	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	9448	Normal	Pirn	2 lb.	2.01	1.91
40/8	0.5Z	Semi-dull	9448	Normal	Beam		2.11	
40/10	0.5Z	Dull	9502	Normal	Pirn	2 lb.	2.06	1.96
40/10	0.5Z	Dull	9502	Normal	Beam		2.16	
50/13	0.5Z	Semi-dull	9528	Normal	Pirn	2 lb.	1.91	1.76
70/32	0.5Z	Semi-dull	9622	Normal	Pirn	2 lb.	1.71	1.66
100/32	0.5Z	Semi-dull	9652	Normal	Pirn	2 lb.	1.65	1.60
200/16	0.6Z	Bright	9826	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	9826	Normal	Beam		1.54	
200/34	0.6Z	Bright	9832	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	9832	Normal	Beam		1.54	

Pirns charged at $.25 or $.45 each, depending on type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be pre-paid and absorbed to the first destination on or east of the Mississippi River. In pre-paying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective June 2, 1958

Denier	Filament	Twist	Type*	Package	Standard Price/Lb.	Second Price/Lb.
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	SD	Spools	5.36	....
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
20	7	Z	D	Bobbins	2.96	2.61
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	D	Bobbins	2.41	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	10	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Bobbins	2.01	1.91
40	13	O	SD	Draw Wind	2.01	1.91
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.96
40	13	Z	D	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
50	17	Z	SD	Draw Wind	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	O	SD	Draw Wind	1.71	1.66
70	34	Z	SD	Spools	1.81	....
70	34	Z	B	Bobbins	1.71	1.66
70	34	O	B	Draw Wind	1.71	1.66
70	34	Z	D	Bobbins	1.76	1.66
70	34	Z	D	Spools	1.86	....
70	34	Z	HB	Bobbins	1.76	1.66
80	26	Z	SD	Bobbins	1.71	1.60
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	SD	Spools	1.75	....
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	SD	Spools	1.70	....
140	68	Z	B	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	34	O	B	Draw Wind	1.49	1.44
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
210	34	Z	RHB	Bobbins	1.59	1.54
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
520	34	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
780	51	Z	HB	Bobbins	1.39	1.29
840	140	Z	HB	Beams	1.20	1.15
840	140	Z	HB	Tubes	1.20	1.13
840	140	O	HB	Draw Wind	1.20	1.13
840	140	Z	RHB	Beams	1.20	1.15
840	140	Z	RHB	Tubes	1.20	1.13
1040	68	Z	SD	Tubes	1.24	1.14
1040	68	Z	HB	Tubes	1.24	1.14
1680	280	Z	HB	Tubes	1.12	....
2080	136	Z	SD	Tubes	1.20	....
15120	2520	Z	RHB	Tubes	1.16	....

* *Types*: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

Prices subject to change without notice.

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Ballston

(Continued from Page 54)

reduced yarn spinning costs and have made it easier to train new help.

Upcoming in the modernization plans are the installation of new winding equipment. Other new equipment includes 100 pound variable mixing pickers and a new humidifying system in the bale room.

For the future, Mooney and other key men at Ballston (including Richard Currie, vice president, Arthur F. Garbrecht, treasurer, and James F. Carrolan, Secretary) intend to continue their already vigorous push into the youth and leisure market for the company's practical low-priced socks—they sell fast these days at prices ranging from 49 cents to $1.49.

Such a marketing course, they realize, may get them more involved in style goods than they have been in the past. But they are already keyed to such trends; in fact, they are planning to put more colored socks in their predominantly white line—one innovation in this direction has been increased production of brightly striped athletic socks to retail at popular prices.

Polypropylene Prices Cut

Hercules Powder Co., sole commercial producer of "Pro-fax" polypropylene, has reduced its prices by 7 cents a pound. Truckload prices for natural Pro-fax molding powder are now 42 cents a pound, with colored Pro-fax at 51 cents. *For further information about polypropylene uses write the editors.*

Fabric Stability

(Continued from Page 76)

SUMMATION

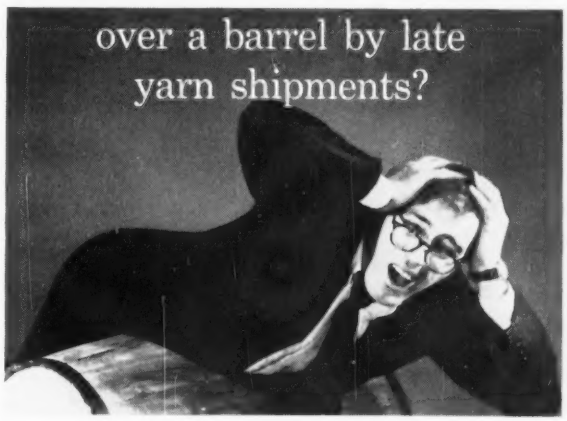
It, therefore, became clear that rayon fibers, in the absence of a chemical treatment on the fabric, shrink because the fibers are too easily extensible when wet. It became obvious that a man-made, cellulose fiber which could be made into all kinds of fabric constructions, must, when wet have a stress at 5% extension of not less than 0.5 grams per denier. Fiber manufacturing research and development then set up a number of programs, and produced fibers of suitably high wet moduli. Courtaulds immediate entrant to the race is known for the time being as SM27, and small quantities are available for evaluation.

An added bonus from the work is that so far, all fibers produced with wet moduli have had higher dry moduli, which has resulted in fabrics of firmer hand and a greatly reduced rubberiness when fully relaxed. This makes them highly promising for finishing by the compressive shrinkage methods such as Sanforising, Rigmel shrinking and the Fabric Research Laboratories compactor process.

National Starch Expansion

National Starch Products Inc. is at present carrying out a 50% expansion of its vinyl acetate polymerization plant at Meredosia, Ill. Reported the largest in the Midwest, the plant manufacturers vinyl emulsions for use in adhesives, paints, paper, textile finishing resins, and packaging materials. The expanded facilities are scheduled to begin operations this spring.

over a barrel by late yarn shipments?



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E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.62
10-1	0	200	Bobbin	8.42	7.62
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Beam	5.36	...
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Beam	5.41	...
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.95	4.50
14-2	0.2Z	200	Bobbin	7.90	7.30
17-2	0.2Z	200	Bobbin	7.05	6.50
20-2	0.2Z	200	Bobbin	5.55	5.05
15-3	0.2Z	200	Bobbin	6.10	5.60
21-3	0.2Z	200	Bobbin	5.48	5.05
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Beam	3.02	...
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Beam	3.07	....
20-20	0.7Z	209	Bobbin	6.00	...
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	...
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	...
30-26	0.5Z	200	Bobbin	2.49	2.21
40-1	0	100	Bobbin	4.03	3.75
40-7	0.5Z	200	Bobbin	2.11	1.91
40-10	0.5Z	200	Bobbin	2.01	1.91
40-13	0.5Z	200	Bobbin	2.01	1.91
40-13	0.5Z	200	Tricot Bms.	2.11	...
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Tricot Bms.	2.16	...
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	100/200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
60-20	0.5Z	200	Bobbin	1.82	1.65
60-34	0.5Z	300	Bobbin	1.86	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0	105 205	Paper Tube	1.71	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	280	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
90-26	0.5Z	200	Bobbin	1.76	1.66
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
110-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	100	Bobbins	1.60	1.55
140-68	0	200	Tubes	1.60	1.55
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0	205	Tube	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-20	1Z	100	Bobbin	1.49	1.44
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0	105	Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100/200	Bobbin	1.56	1.44
210-34	0	300	Tubes	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	...
210-34	0	305	Tube	1.49	1.44
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
520-34	1Z	300	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs	1.20	1.13
840-140	0.5Z	300/700	Beam	1.20	...
1680-280	0.5Z	300/700	Al. Tbs. & Beams	1.12	....

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.95
100-34	0	140	Tubes	2.00	1.95
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn

				Price/Lb.
840-140	0.5Z	707	Cone	$1.13
2520-420	0	700	Paper Tube	1.18
4200-700	0	700	Paper Tube	1.17
5040-840	0	700/707	Paper Tube	1.17
7560-1260	0	700/707	Paper Tube	1.16
10080-1680	0	700/707	Paper Tube	1.16
15120-2520	0	700/707	Paper Tube	1.16

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 105—Bright, normal tenacity, low shrinkage (5-7%)
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 205—Semidull, normal tenacity, low shrinkage (5-7%)
Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 300—Bright, high tenacity.
Type 305—Bright, high tenacity, low shrinkage (5-7%)
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 420—Semidull, high tenacity, high modulus, no crimp
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.
Type 707—Bright, high tenacity (over 8.5 gpd) cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Denier & Filament	Turns/Inch	Luster	Type*	Tubes Tubes 1st Gr.
30-14	0	Bright	55	$2.71
30-20	0	Semidull	56	2.71
40-27	0	Semidull	56	2.31
40-27	0	Bright	55	2.31
40-27	0	Dull	57	2.36
70-34	0	Semidull	56	1.91
70-14	0	Bright	55	1.91
70-34	0	Bright	55	1.91
70-34	0	Dull	57	1.96
100-34	0	Semidull	56	1.84
140-28	0	Bright	55	1.79
150-34	0	Semidull	56	1.79
220-50	0	Bright	51	1.76
250-50	0	Bright	55	1.76
1100-250	0	Semidull	59	1.50
1100-250	0	Bright	51	1.50
1100-250	0	Bright	52	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 52—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN FIBERS

The Saran Yarns Company — Odenton, Maryland

The Hall Company (Selling Agent)
41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
1240/10	3	$1.32	$1.37
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.
Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"*

Effective January 1, 1959

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dull and Bright staple & tow	$1.24	$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.18	1.18
3.0 denier Bright & Semi-dull staple & tow	1.18	1.18
5.0 denier Bright & Semi-dull staple & tow	1.18	1.18
8.0 denier Bright & Semi-dull staple	1.18	1.18
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

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The Dow Chemical Company

Textile Fibers Department

Current Prices

"Zefran"*

2.0 denier Semidull & Bright—Staple only	$1.33
3.0 denier Semidull & Bright—Staple only	1.28
6.0 denier Semidull & Bright—Staple only	1.20

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the U. S., for points west of the Mississippi River crossing nearest purchaser's mill if shipped overland or port of exit of purchaser's choice east of the Mississippi River.

* "Zefran" is Dow's registered trademark for its acrylic alloy fiber.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull	$1.28
2.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.18
6.0 Denier Color-sealed Black	1.55
4.5 Denier Semidull	1.18
10.0 Denier Semidull & Bright	1.18

Tow—Total Denier 470,000

Staple Lengths—1½", 2", 2½", 3", 4½"

High Shrinkage Staple price as Regular Staple

Type 25 $1.18

This product is designed for *Cotton/Rayon System* Spinning and is 2.5 denier, 1½" semidull regular shrinkage staple.

Type 39 $.94

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A $.99

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B $.94

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Effective November 3, 1958

"Verel"* Staple and Tow

Deniers	Dull and Bright
2 and 3	$1.02 per pound
5, 8, 12, 16, and 20	.92
24 denier	.97

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

The B. F. Goodrich Company
B. F. Goodrich Chemical Co.

DARVAN

Effective Nov. 21, 1958

Type	Price Per Pound Not Crimp Set	Crimp Set
3, 4½ and 6 Denier	$1.45	$1.50
1½, 2 Denier	$1.50	$1.55

Pack in 100 Lb. Bales, Net

Staple lengths 1½, 2, 3, 4½

Tow—90,000 Total Denier

Bright, Semi-dull, Dull

(Deniers and lengths of staple not listed above are available upon special request.)

Terms: Net 30 Days.

F.O.B. Shipping Point (Avon Lake, Ohio) Minimum freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if overland, or port of exit of purchaser's choice east of the Mississippi River.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective October 1, 1957

Dynel Staple & Tow

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors: Blond or Gray	
3 and 6 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3 and 6 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 Bulking Fiber (3 Denier only)	Add $.05 per lb. to above prices

Prices are quoted f.o.b. South Charleston, W. Va.

NYLON

American Enka Corp.

Effective August 19, 1958

Enka Nylon (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅝	1.15
10	bright	3	1.08
15	bright	3	1.08
15	semi-dull	3	1.08

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1⅛"—4½"	None made	$1.33	$1.18
1.5	201	1⅛"—4½"	None made	1.35	1.20
2.2	420	1½" only	None made	1.28	1.13
3.0	100/200	1⅛"—4½"	430M	1.28	1.13
3.0	101/201	1⅛"—4½"	455M	1.30	1.15
6.0	100	1⅛"—4½"	330M	1.28	1.13
6.0	101	1⅛"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	425M	1.08	....
15.0	101	1½"—6½"	None made	1.10	....
15.0	600	1½"—6½"	425M	1.10	....
15.0	601	1½"—6½"	None made	1.12	....

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1¼, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective August 18, 1958

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 denier	1.15 per lb.
15 and 22 denier	1.08 per lb.

Bright, semi-dull, and full-dull. Required lengths.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"* Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1¼"-3"		$1.36
1.5	Semidull	64	Tow only	375M-600M	1.41
1.5	Semidull	54	1¼"-3" & Tow	375M-600M	1.36
3.0	Semidull	64	1¼"-4½" & Tow	375M-500M	1.41
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.36
4.5	Semidull	64	1¼"-4½" & Tow	375M-500M	1.36
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.31
6.0	Semidull	64	1¼"-4½" & Tow	375M-500M	1.36
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.31

* Type:
Type 54—Semidull, Normal Tenacity.
Type 64—Pill Resistant more Dyeable Staple for Worsted & Rayon Blends.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co. Effective September 15, 1958

"Kodel"*

1½ denier	$1.60
3 and 4½ denier	1.50

Terms: Net 30 days.

POLYVINYL ACETATE

American Viscose Corp. Effective October 1, 1956

"Vinyon"® Staple

3.0 denier	½" unopened	$.80 per lb.
3.0 "	1¼" unopened	.80 per lb.
3.0 "	1¼" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3½" opened	.90 per lb.
5.5 "	3½" unopened	.80 per lb.

Terms: Net 30 days.

SARAN FIBERS

The Saran Yarns Company — Odenton, Maryland

The Hall Company (Selling Agent)

41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Curren' Prices: Saran Staple

Type	Denier	Natural	Colors
2N	22	$0.70	$0.75
2N	16	.74	.79
3Q*	22	.63	.67

In any staple length 1½ to 6". Also 45 denier, 7" cut.

* For carpets and industrial fabrics.

F.O.B. Odenton, Maryland.

Terms: net 30 days.

METALLICS

Textile Fibers Dep't

The Dow Chemical Co., James River Div.

Williamsburg, Va.

Lurex Yarn Division Current Prices

#150 LUREX-MM* (Made with Metalized Mylar)

Width	1/128"	1/100"	1/64"	1/50"	1/32"
Silver					
Yield in Yds/Lb	42,400	35,300	23,200	16,600	10,500
1 Case to 1,999#	$10.65	$10.25	$7.80	$7.60	$7.35
2,000# to 4,999#	10.10	9.75	7.40	7.20	7.00
5,000# and over	9.90	9.55	7.25	7.05	6.85
Gold & White Gold					
Yield in Yds/Lb	37,900	30,000	19,200	15,000	9,400
1 Case to 1,999#	$10.90	$10.50	$8.00	$7.75	$7.60
2,000# to 4,999#	10.35	10.00	7.60	7.35	7.20
5,000# and over	10.15	9.75	7.45	7.20	7.05
Standard Colors					
Yield in Yds/Lb	37,500	29,500	19,100	15,400	9,300
1 Case to 1,999#	on	on	$9.00	on	$8.70
2,000# to 4,999#	Re-	Re-	8.55	Re-	8.25
5,000# and over	quest	quest	8.35	quest	8.10

#150 LUREX MF* (Mylar—Foil—Mylar)

Width	1/100"	1/64"	1/50"	1/32"
Silver				
Yield in Yds/Lb	26,000	18,700	13,900	9,300
1 Case to 1,999#	$7.80	$5.45	$5.25	$5.15
2,000# to 4,999#	7.40	5.15	5.00	4.90
5,000# and over	7.25	5.05	4.90	4.80
Gold, White Gold & Copper				
Yield in Yds/Lb	24,000	17,250	12,700	8,400
1 Case to 1,999#	$8.00	$5.60	$5.40	$5.30
2,000# to 4,999#	7.60	5.30	5.15	5.05
5,000# and over	7.45	5.20	5.00	4.90
Standard Colors				
Yield in Yds/Lb	25,000	17,500	13,000	8,700
1 Case to 1,999#	$8.75	$6.30	$6.15	$6.00
2,000# to 4,999#	8.30	6.00	5.85	5.70
5,000# and over	8.10	5.85	5.70	5.60

#260 LUREX* (Regular Butyrate)

Width	1/100"	1/80"	1/64"	1/50"	1/32"	1/16"
Gold, Silver & Copper						
Yield in Yds/Lb	16,400	13,000	10,500	8,200	5,200	2,600
1 Case to 1,999#	$4.50	$4.00	$3.35	$3.25	$3.00	$2.85
2,000# to 4,999#	4.30	3.80	3.20	3.10	2.85	2.70
5,000# and over	4.20	3.70	3.10	3.00	2.80	2.65
Standard Colors						
Yield in Yds/Lb	—	—	10,500	8,200	5,200	—
1 Case to 1,999#	—	—	$3.45	$3.35	$3.10	—
2,000# to 4,999#	—	—	3.30	3.20	3.00	—
5,000# and over	—	—	3.20	3.10	2.90	—
Multicolors						
Yield in Yds/Lb	—	13,000	10,500	—	5,200	—
1 Case to 1,999#	—	$4.30	$3.65	—	$3.30	—
2,000# to 4,999#	—	4.10	3.45	—	3.15	—
5,000# and over	—	4.00	3.40	—	3.10	—

A. LUREX*, LUREX-MM*, and LUREX MF* are the registered trademarks of The Dobeckmun Company, A Division of The Dow Chemical Company. Mylar is DuPont's polyester film.

B. Standard Colors:

L-941	Scarlet	L-981	Pink Opal
L-984	Turquoise	L-942	Peacock Blue
L-940	Emerald Green	L-983	Violet
L-861	Bronze	L-978	Gunmetal
2A-1	Multicolor	3A-2	Multicolor
4A-5	Multicolor	4A-7	Multicolor
6A-1	Multicolor	6A-2	Multicolor
L-869	Fuchsia	L-982	Blueflower
L-935	Royal Blue	L-980	Apple Green
L-1008	Purple	L-933	Copper
L-850	Jet	L-1007	Green Gold
3A-3	Multicolor	1A-3	Multicolor
4A-14	Multicolor	4A-4	Multicolor
6A-3	Multicolor	3A-4	Multicolor

C. Other colors available on a custom basis only for which a minimum firm order of 150 lbs. is required. Regular color prices will apply. After approval of color swatch, one sample run of 10 lbs. or over can be ordered with an up-charge of $2.00 per lb. over regular color prices.

D. LUREX-MM, LUREX-MF and regular LUREX is supplied on disposable spools having plastic end plugs with 3/8" I.D. holes. Spools contain approx. 1 lb. of yarn.

E. Cases contain 6 LUR-PAKS. Each LUR-PAK contains 6 one pound spools.

F. Yields are subject to variation of plus or minus 5%.

G. TERMS: 1% 10 days from date of invoice, Net 30 days, FOB shipping point. Minimum freight allowed on shipments of 100 pounds and over.

H. Items may be combined for quantity prices.

FAIRTEX CORPORATION

1808 Liberty Life Building

Charlotte 2, N. C.

December 1, 1958

1. Fairtex No. 260 (butyrate)—gold, silver and copper.

Width	Yield (per pound)	Price (per pound)
1/120"	21,000	$4.75
1/80"	13,000	4.00
1/64"	10,800	3.35
1/50"	8,400	3.25
1/32"	5,300	3.00
1/16"	2,600	2.85
1/8"	1,300	2.70

2. Fairtex with Mylar* No. 100V (2 ply), (metallized type)—silver only.

1/100"	48,000	11.25
1/80"	37,000	9.40
1/64"	31,000	8.50
1/50"	24,200	8.35
1/32"	15,500	8.20

Fairtex with Mylar* No. 150V (3 ply), (metallized type)—gold and silver.

1/100"	32,000	9.55
1/80"	25,000	8.15
1/64"	21,000	7.25
1/50"	16,400	7.05
1/32"	10,500	6.85

3. Fairtex with Mylar* No. 150F, (foil type)—gold and silver.

1/100"	28,000	7.25
1/80"	21,450	6.10
1/64"	17,200	5.05
1/50"	13,400	4.90
1/32"	8,600	4.80
1/16"	4,300	4.65

General Information and Conditions of Sale

1. Fairtex is supplied on 1 lb. disposable spools—48 spools per case and on ½ lb. disposable spools—100 spools per case.

2. Disposable spools have plastic heads with 3/8" I.D. holes.

3. Yields are subject to variation of plus or minus 5%.

4. Terms: 1%—10 days, net 30 days. Min. freight allowed on shipments of 100 pounds and over.

5. Colors available on above upon request: 35¢ per lb. additional on No. 260, 65¢ on 150V and 150F.

6. No quantity discounts on 100V, 150V and 150F qualities.

* Du Pont's registered trademark for polyester film.

Metlon Corp.

Effective December 1, 1958

Replaces September 2, 1958

METLON*—MYLAR**

Price List

METLON* V—MYLAR** (Vacuum deposited, 2 ply)

Width	Yards Per Lb. (Plus or minus 5%)	Silver Only Price Per Lb.
1/64"	31,000	$8.50
1/50"	24,000	8.35
1/32"	15,500	8.20

METLON* V—MYLAR** (Vacuum deposited, 3 ply)

Width	Yards Per Lb. (Plus or minus 5%)	Price Per Lb. Gold	Silver
1/64"	21,000	$7.35	$7.25
1/50"	16,400	7.10	7.05
1/32"	10,500	6.95	6.85

Colors available in 3 ply only at 65¢ per pound over price for Gold.

No Quantity Discounts On Either Quality.

Terms: 1% 10 days, net 30. F.O.B. Providence, Rhode Island. Minimum freight allowed on shipments of 100 lbs. or over.

Put Up: Plastic Disposable Spools.

Minimum Order: One case (approximately 35 lbs. net). Smaller quantities subject to surcharge.

Palletizing: On request, shipments of 4 cases or more will be palletized without additional charge.

* Metlon's registered trademark for non-tarnishing metallic yarn.

** DuPont's registered trademark for polyester film.

METLON*—MYLAR** (Foil Laminated)

	1/120"	1/80"	1/64"	1/50"	1/32"
Metlon-F Mylar					
Yards Per Lb. (±5%)	32,200	21,500	17,200	13,500	8,600
Gold	$9.35	$6.75	$5.20	$5.00	$4.90
Silver	9.35	6.75	5.05	4.90	4.80
Standard Colors	10.00	7.40	5.85	5.65	5.55
Metlon-F Mylar Ultravat					
Yards Per Lb. (±5%)	32,200	21,500	17,200	13,500	8,600
Gold	$9.60	$7.00	$5.65	$5.45	$5.35
Silver	9.60	7.00	5.55	5.40	5.30
Metlon-F Mylar Superfine					
Yards Per Lb. (±5%)	35,100	23,450	18,750	14,700	9,400
Gold	$10.00	$7.25	$5.60	$5.40	$5.30
Silver	10.00	7.25	5.50	5.30	5.20
Standard Colors	10.65	7.90	6.25	6.05	5.95
Metlon-F Mylar Superfine Ultravat					
Yards Per Lb. (±5%)	35,100	23,450	18,750	14,700	9,400
Gold	$10.25	$7.50	$6.00	$5.85	$5.75
Silver	10.25	7.50	6.00	5.85	5.75

Prices for 1/16" and 1/8" same as for 1/32". Yields are proportionate.

* Metlon's registered trademark for non-tarnishing metallic yarn.

** DuPont's registered trademark for polyester film.

New Polypropylene Source

American Viscose Corp. and Sun Oil Co. have formed an equally-owned affiliate, AviSun Corp. Plans call for the new affiliate to be the nation's largest commercial supplier of polypropylene by midsummer from leased facilities of the Port Reading, N. J., linear polyethylene plant of Koppers Co., Inc. Capacity of the converted plant is estimated to be about 20 million pounds a year.

Officers of the new company are: Chalmer G. Kirkbride, president; William H. Brown, treasurer and assistant secretary, and Joseph T. Wilson, Jr., secretary and assistant treasurer.

Polypropylene is one of the lightest plastics discovered, yet possessing exceptional toughness and structural strength.

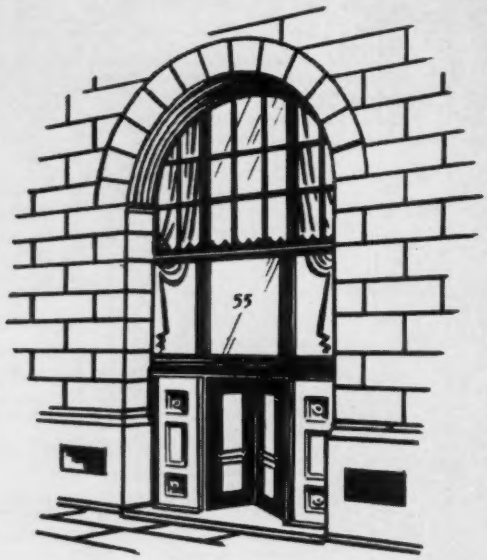
OPPORTUNITY

Man-Made Fiber producer has opening for young man college graduate, 25-30 years old with some textile experience as Sales administrative assistant leading to opportunity in direct sales.

Box 815, Modern Textiles Magazine
303 Fifth Avenue
New York 16, New York

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



Textile Banking Company

55 Madison Avenue, New York 10, N.Y.

Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

Subsidiaries:

T. B. C. Associates, Inc., New York **Southwest Texbanc, Inc., St. Louis**

(Continued from Page 95)

Edward W. Westhead has been appointed controller of American Viscose Corp., succeeding **LaRue Hendrixson**, retired, and **Prescott W. Brown** has been appointed manager of technical sales service for all Avisco filament yarns. Succeeding Mr. Brown as technical sales service representative as Viscose's Meadville acetate plant is **H. Jackson Sherertz.**

Dr. Jesse Werner has been elected a vice president of General Aniline & Film Corp.

L. H. Needham, Jr. has been named credit manager of Industrial Rayon Corp.

G. O. Linberg

George O. Linberg has been appointed executive vice president of Melrose Chemical Corp.

James C. Shore has been promoted to sales manager for Metro-Atlantic, Inc., covering New England, the Middle Atlantic states, the Mid-West, the Pacific Coast, and Canada.

Richard T. Snipes has joined N. Y. & N. J. Lubricant Co. as sales representative in the South Carolina territory.

Benjamin J. Zalkind has rejoined Saco-Lowell Shops as consulting engineer in the product engineering department of the company's Textile Machinery Division.

Robert E. Walther has been appointed sales representative in Chicago for the Stanley Steel Strapping division of The Stanley Works.

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

CLASSIFIED RATES
Per Inch
2 columns to the page, each column 8 inches deep

1 Inch	$8.00
2 Inches	15.00
3 Inches	22.50
4 Inches	28.00
5 Inches	35.00
6 Inches	42.00
7 Inches	49.00
8 Inches	52.00

DACRON, NYLON, RAYON & ACETATE BOUGHT AND SOLD

YARNS

BERTNER YARN COMPANY

Empire State Bldg. **New York City**

Oxford 5-1170

One of America's oldest and most respected specialty manufacturers, located in the Southeast, has an exceptional opportunity for a young

WOOLEN MANUFACTURING

OR

PRODUCTION ENGINEER

REQUIREMENTS: Mechanical or Textile Engineering Degree; Familiar with all phases of Textile Manufacturing; Actual experience in all Production Departments in a WOOLEN MILL. Must have the potential to become a Production Superintendent.
COMPENSATIONS: Excellent starting salary with regular Merit Increase; Steady employment; Liberal Health, Accident, Vacation and Retirement Benefits; Paid Moving Expenses. *SELECTED APPLICANTS* will be given personal interview at our expense. *SEND COMPLETE RESUME* including education, experience, and salary expectations to Box 808.

Modern Textiles Magazine 303 Fifth Ave. New York 16, N. Y.

Wanted

ENGINEERS

with experience in the layout, engineering and equipment specifications of man-made fiber plants (viscose, nylon). Foreign travel required. Applications treated confidentially. Box 813.

Modern Textiles Magazine
303 5th Ave., New York 16, N. Y.

FOR SALE

McBeth Lamp—with rack for rolled goods
Automatic reel return—10 ultra violet 1000 watt
North Lamps, 14 projector flood 300 watt
South Lamps

Box 810
Modern Textiles Magazine
303 5th Ave New York 16, N. Y.

TEXTILE CONSULTANT

To be in Europe from early May to November seeks assignments in fibers, fabrics, processes, machinery or market lines.

RENE BOUVET
517 Brookfield Road
Drexel Hill, Pa.

OPPORTUNITY

Weaving Overseer wanted for Jacquard Mill, N. E. location. Box 811.

Modern Textiles Magazine
303 5th Ave. New York 16, N. Y.

CHIEF ENGINEER

with extensive experience in organizing, coordinating and supervising drafting, engineering, procurement and plant construction in man-made fiber field. Traveling required. Box 812.

Modern Textiles Magazine
303 5th Ave., New York 16, N. Y.

EMPLOYMENT SERVICE
Over 55 Years In Business

THE POSITION YOU WANT may be available right now. The demand for executives is increasing. Salaries are attractive. You are invited to send us your resume in confidence.

THE EXECUTIVE YOU NEED may be listed with us. Employers find our Service helpful and time saving.

Your phone call, wire or letter will bring prompt attention.

CHARLES P. RAYMOND SERVICE, INC.
Phone LIberty 2-6547 294 Washington St. Boston 8, Mass.

WANTED

Top plant executive to take charge of all manufacturing for outstanding fabric firm. Knowledge of dyeing and finishing and warp knitting preferred. Right man will have familiarity with fabric distribution and exceptional business ability. Salary to match the man.

Our employees are aware of this ad. All replies held in strict confidence. Please reply to Box #814.

Modern Textiles Magazine
303 5th Ave., New York 16, N. Y.

OPPORTUNITIES

We have the following openings in our

VISCOSE DIVISION
Senior and junior engineers for layouts and specifications.
Senior designers and design engineers.
High-tenacity yarn and staple production specialists.

ACETATE DIVISION
Senior production chemist.

SYNTHETIC FIBER DIVISION
For Acrylic Fibers and Acrylic Intermediates;
Engineers for layouts and specifications.
For Nylon 6:
Caprolactam plant layout engineers.

PULP DIVISION
Senior layout engineer for dissolving pulp plant.

DRAFTING OFFICERS
Machine designers and design engineers.

We are also interested in retired engineers and chemists as consultants. Applications will be treated in confidence. State details in first letter. Box 809.

Modern Textiles Magazine
303 Fifth Ave., New York 16, N. Y.

Calendar of Coming Events

Apr. 1—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Apr. 2-3—Textile Subcommittee of American Institute of Electrical Engineers annual conference. Heart of Atlanta Motel, Atlanta, Ga.
Apr. 9-11—Alabama Textile Manufacturers Association annual convention. Hotel Buena Vista, Biloxi, Miss.
Apr. 10-11—AATCC, Piedmont Section. Robert E. Lee Hotel, Winston-Salem, N. C.
Apr. 13-17—National Packaging Exposition, sponsored by American Management Association. International Amphitheater, Chicago, Ill.
Apr. 15-16—ACMI Cotton Fiber Testing Laboratory's open house. Clemson House, Clemson, S. C.
Apr. 15-16—National Knitted Outerwear Association annual meeting. Waldorf-Astoria Hotel, New York, N. Y.
Apr. 17-18—Delta Kappa Phi Fraternity annual convention. Roger Smith Hotel, Washington, D. C.
Apr. 22-25—Cotton Manufacturers Association of Georgia annual meeting. Diplomat Hotel, Hollywood Beach, Fla.
Apr. 23-25—Phi Psi Textile Fraternity annual convention. Biltmore Hotel, Atlanta, Ga.
Apr. 25—Textile Operating Executives of Georgia meeting. Georgia Tech, Atlanta, Ga.
Apr. 28-29—Institute Textile Technology meeting of Technical Advisory Committee and Board of Trustees. Charlottesville, Va.
Apr. 29-30—The Fiber Society, Inc. spring meeting. Fontana Village, N. C.
May 2—Alabama Textile Operating Executives spring general meeting on slashing and weaving problems. Thach Auditorium, Auburn, Ala.
May 4—Nat'l Association Hosiery Manufacturers annual meeting. Claridge Hotel, Atlantic City, N. J.
May 4-8—Knitting Arts Exhibition. The Auditorium, Atlantic City, N. J.
May 5—93rd annual meeting Underwear Institute. Hotel Traymore, Atlantic City, N. J.
May 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
May 12-14—Cotton Research Clinic. Grove Park Inn, Asheville, N. C.
May 12-16—Textile Institute annual conference. Scarborough, England.
May 13-16—Tufted Textile Manufacturers' Association annual convention. Hollywood Beach Hotel, Hollywood Beach, Fla.
May 18-23—National Cotton Week.
May 25-27—American Society for Quality Control convention. Public Hall, Cleveland, Ohio.
May 28-30—South Carolina Textile Manufacturers' Association annual meeting. The Cloister, Sea Island, Ga.
Jun. 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Jun. 9-12—Material Handling Institute's Exposition. Public Auditorium, Cleveland, Ohio.
Jun. 18-20—Southern Textile Association annual convention. Ocean Forest Hotel, Myrtle Beach, S. C.
July 13-17—Gordon Research Conferences, Textile sessions. Colby Junior College, New London, N. H.
Sep. 10-11—Fiber Society Inc. meeting. Princeton, N. J.
Sep. 12-21—3rd International Textile Exposition. Milan, Italy.
Sep. 17-18—Chattanooga Yarn Association annual outing. Chattanooga, Tenn.
Sep. 28-29—American Gas Association textile processing symposium. Sedgefield Inn, Greensboro, N. C.
Oct. 1-2—Textile Quality Control Association fall meeting. Grove Park Inn, Asheville, N. C.
Oct. 7—Chemical-Finishing Conference, sponsored by National Cotton Council. Mayflower Hotel, Washington, D. C.
Oct. 8-10—AATCC annual convention. Sheraton-Park and Shoreham Hotels, Washington, D. C.

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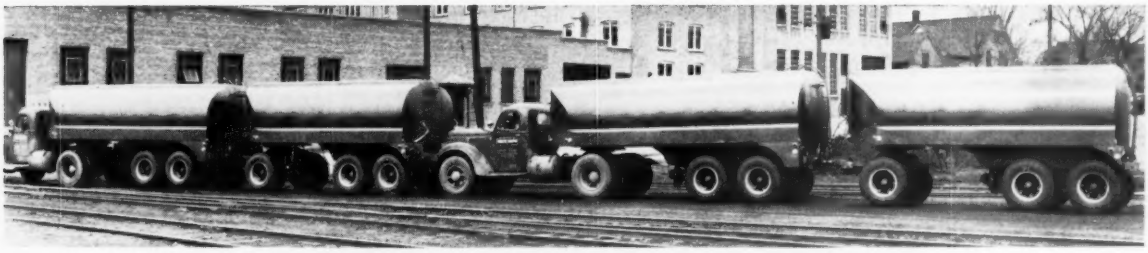

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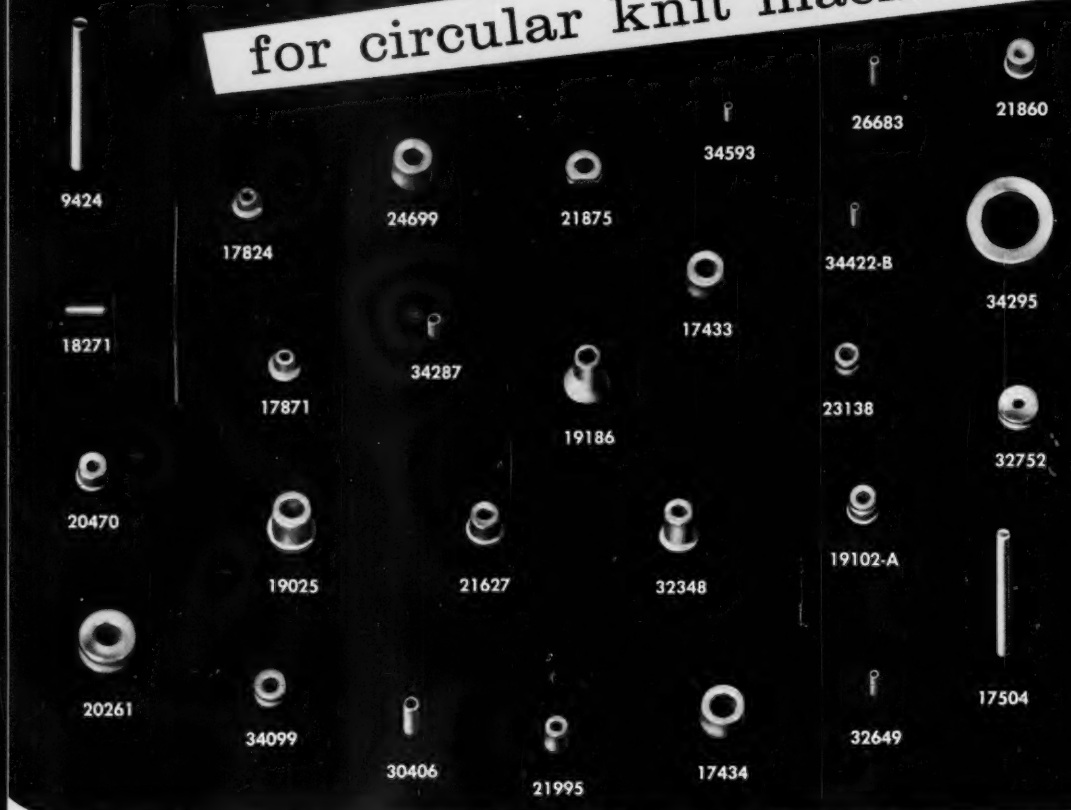

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